

## **“GDP: Does It Measure Up?”**

**May 2013**

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# PAGE ONE Economics

the back story on front page economics

NEWSLETTER

May ■ 2013

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## GDP: Does It Measure Up?

Scott A. Wolla, *Senior Economic Education Specialist*

*“Not everything that counts can be counted, and not everything that can be counted counts.”*

—Albert Einstein

We can measure our national progress in many ways. But even if we restrict our measurement to the economy—and set aside social, cultural, and political progress for a moment—the total value of the **goods** and **services** produced in the economy can be mind-boggling. Think of all the goods (shoes, oranges, computers...) and services (haircuts, doctor visits, car repairs...) produced in the United States. Even more intimidating is trying to capture that production in a single number. One common and fairly comprehensive measure is **gross domestic product (or GDP)**, which is a statistic calculated by the U.S. Department of Commerce; it measures the total market value of all final goods and services produced in an economy in a given year. Simply put, GDP measures the size of the economy. It is among the most important and widely reported pieces of economic data. A variety of people, from business owners to policymakers, use GDP in their decisions. And, while the National Bureau of Economic Research<sup>1</sup> uses a comprehensive method of determining the phases of the business cycle, the general rule of thumb says two consecutive quarters of negative real GDP constitutes a **recession**. In short, GDP is central to our understanding of the state of the economy.

What happens to the goods and services produced? U.S. consumers, businesses, and the government—and those same groups in foreign countries—buy them. The largest portion of GDP is consumer spending, the money you and I spend on goods and services. This portion has grown from 59 percent of GDP in 1951 to its current level of just over 70 percent. Because spending on output by one group of people becomes income for others, GDP can be described in terms of either expenditures or income. The bookkeeping system used to calculate GDP is referred to as national income accounting.

### Let's Get Real

Even though GDP is a valuable measurement tool, prices are used in calculating the value of output. This causes difficulty with calculating changes in GDP over time because an increase in GDP could mean any of the following: (i) The country has produced more goods and services. (ii) The country has produced the same amount of goods and services, but the prices of those goods and services are higher. Or (iii), some combination of higher production levels and higher prices has caused GDP to increase. If we want to use GDP to measure the “real” increase or decrease over time in the level of final goods and services produced, we must remove the effect of price changes from the data. Therefore, **real GDP** controls for inflation and more accurately reflects actual economic growth. When economists discuss GDP, they are usually referring to



real GDP. When GDP is presented in its unadjusted form, it is often labeled **nominal GDP** (see the chart).

### **Growth Is Good, but Is It Everything?**

Just as your parents measured your growth by comparing your height today with your height last year, economists measure **economic growth** by comparing real GDP over time. Economic growth is usually presented as a percentage increase or decrease from an earlier period. For example, it might be useful to know that nominal GDP in the fourth quarter of 2012 was \$15.864 trillion, but it is probably more meaningful to know that *real* GDP increased by 0.4 percent from the fourth quarter of 2011 to the fourth quarter of 2012; in other words, the economy grew, but only by a fraction of 1 percent. To put that number in context, real GDP has grown at an average annual rate of 3.3 percent since 1950. Economists expect some slowing of future U.S. GDP growth as the labor force grows more slowly. The Federal Open Market Committee has projected real GDP growth of 2.3 to 2.5 percent (central tendency)<sup>2</sup> in the longer run.<sup>3</sup>

Why is economic growth important? A growing economy produces more goods and services for its population, including more health care and education. And, generally speaking, more is better. But greater production of goods and services is only one factor that contributes to well-being. Many meaningful aspects of life cannot be quantified in GDP. An evening walk on the beach or an afternoon playing Frisbee in the park may bring you satisfaction; in fact, you might value either activity greatly. But GDP does not include the kind of value that Robert Kennedy referred to when he said, “The gross [domestic] product does not allow for the health of our

children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials.” What Kennedy said is accurate, but GDP is not designed or intended to measure well-being; it is meant to measure output/production in terms of dollars. Simon Kuznets, the economist who pioneered the national income accounting process, warned “The welfare of a nation can scarcely be inferred from a measure of national income.”

In addition, GDP does not measure economic activity that occurs outside markets. So, if you mow your own lawn, the value of that activity does not show up in GDP, but if you hire a lawn service it does. Another category not captured by GDP includes the nonmarket by-products of market production, such as pollution. Finally, GDP does not capture illegal activities in the underground economy or the “black market” because such transactions are not recorded.

## Conclusion

GDP data are among the most important economic data available, but measuring the output of a large, dynamic economy is a complex task. GDP measures production levels during a period of time, which can be adjusted for inflation and compared with earlier periods as an indication of economic growth. And, in general, growth is good. Finally, while GDP measures market activity, it doesn’t capture well-being; it’s not meant to. ■

## NOTES

<sup>1</sup> See National Bureau of Economic Research. “The NBER’s Business Cycle Dating Committee.” September 20, 2010; <http://www.nber.org/cycles/recessions.html>.

<sup>2</sup> The central tendency excludes the three highest and three lowest projections.

<sup>3</sup> See “Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents.” March 2013; <http://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20130320.pdf>.

## GLOSSARY

**Economic growth:** A sustained rise in a nation’s production of goods and services over time.

**Goods:** Objects that satisfy people’s wants.

**Gross domestic product (GDP):** The total market value, expressed in dollars, of all final goods and services produced in an economy in a given year.

**Nominal gross domestic product (GDP):** The total market value of all final goods and services produced in an economy in a given year, expressed by using the current year’s price for goods and services. Also known as current-dollar GDP. The nominal gross domestic product for the fourth quarter of 2012 was \$15.864 trillion.

**Real gross domestic product (GDP):** The total market value of all final goods and services produced in an economy in a given year, calculated by using a base year’s price for goods and services; nominal GDP adjusted for inflation. Also known as constant-dollar GDP. The real gross domestic product for the fourth quarter of 2012 was \$13.665 trillion (2005 dollars).

**Recession:** A period of declining real income and rising unemployment; significant decline in general economic activity extending over a period of time.

**Services:** Actions that can satisfy people’s wants.

*Page One Economics Newsletter* from the Federal Reserve Bank of St. Louis provides an informative, accessible economic essay written by our economic education specialists, who also write the accompanying classroom edition and lesson plan. The newsletter and lesson plans are published 9 times per year, January through May and August through November.

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Name \_\_\_\_\_ Period \_\_\_\_\_

Federal Reserve Bank of St. Louis *Page One Economics Newsletter*:  
"GDP: Does It Measure Up?"

After reading the article, answer the following questions.

1. An economy's GDP is broken down into several components. Which is the largest?
2. Why is real GDP a better measure of economic growth than nominal GDP?
3. Why is growth important?
4. Explain why GDP is better suited to measure economic output and growth than well-being.
5. What are some economic activities that are not included in GDP because they occur outside formal markets?

## Teacher's Guide

### Federal Reserve Bank of St. Louis *Page One Economics Newsletter*: "GDP: Does It Measure Up?"

After reading the article, answer the following questions.

**1. An economy's GDP is broken down into several components. Which is the largest?**

The largest portion of GDP is consumer spending (this is the consumption portion of GDP). This portion has grown from 59 percent in 1951 to its current level of just over 70 percent.

**2. Why is real GDP a better measure of economic growth than nominal GDP?**

If we want to use GDP to measure the "real" increase or decrease in the level of final goods and services produced, we must remove the effect of inflation from the data. Real GDP controls for inflation and more accurately reflects actual economic growth when comparing real GDP over periods of time.

**3. Why is growth important?**

A growing economy produces more goods and services for its population, including more health care and education. And, generally speaking, more is better.

**4. Explain why GDP is better suited to measure economic output and growth than well-being.**

Many meaningful aspects of life cannot be quantified in GDP. An evening walk on the beach or an afternoon playing Frisbee in the park may bring you satisfaction. GDP measures economic activity and is not designed to measure well-being.

**5. What are some economic activities that are not included in GDP because they occur outside formal markets?**

Goods and services produced at home (mowing your own yard), by-products of market production (pollution), and goods sold in illegal markets are not captured in GDP because the transactions are not recorded.

## For Further Discussion

Review the following or distribute the handout to your students; then lead a classroom discussion on the expenditure method for calculating GDP.

Let's take a look at the expenditure method for calculating GDP. The expenditure method divides spending into four categories: consumption, investment, government spending, and net exports.

### Components

**1. Consumption (C).** This is consumer spending on final goods and services, such as food, education, computers, gasoline, and medical expenses. Notice that only "final" goods and services are counted—these are goods and services sold to the end user. Intermediate goods are those that are used in the production of goods and services. While not counted directly, the value of an intermediate good (e.g., a car windshield) is reflected in the price of the final good (a new car) or service. This is the largest component of GDP; it represented 71 percent of total spending in 2012.

**2. Investment (I).** This is business spending on capital goods—tools, equipment, and buildings. A business investment might be a firm upgrading its computer system, buying a new forklift, or adding to its fleet of delivery vans. To be clear, "investment" in this sense is not about buying stocks and bonds—economists refer to this activity as saving. Investment spending refers to the purchase of physical capital. Changes in inventories, which are stocks of goods and raw materials held to facilitate business operations, are also counted as changes in investment. One last category counted here is construction of new structures such as factories and new homes. This component represented 13.1 percent of total spending in 2012.

**3. Government spending (G).** This is spending by all levels (federal, state, and local) of government on goods and services. This component includes salaries of police and firemen, weapons for the military, and infrastructure spending on new highways and bridges. It does not include spending on Social Security or unemployment benefits—these are considered transfer payments. Spending on transfer programs is measured when the money is spent by the recipients on goods and services, so it is included in consumption (C). This component represented 19.2 percent of total spending in 2012.

**4. Net exports (NX).** These are calculated as exports (X) minus imports (M). Mathematically, this is expressed as  $NX = X - M$ . Exports are goods and services produced in the domestic (or home) country for consumption in another country. Imports are goods and services produced in another country for consumption in the home country. Imports are subtracted so goods produced elsewhere are not counted as part of GDP. So, when you buy an imported pair of shoes, the value of the shoes is counted as part of consumption (C); subtracting the value as an import (M) ensures that only domestically produced goods and services are counted as GDP. For example, in 2012 exports totaled \$2,185 billion, while imports totaled \$2,719 billion. So, net exports (\$2,185 billion – \$2,719 billion) equaled –\$534 billion. Because this number was negative, in terms of GDP, net exports represented –3.3 percent of total spending on domestic output in 2012.<sup>1</sup>

These components can be arranged into a formula that can be used to calculate changes in GDP, with GDP on one side of the equal sign and the variables added together on the other side of the equation. To be clear, this is nominal GDP—it is not adjusted for inflation. The formula is as follows:

$$GDP = C + I + G + (NX).$$

Remember that an equation includes two statements that are equal, so a change on one side must be reflected by a change on the other side. Therefore, a change to any of the variables on the right side of the equation (C, I, G, or NX) must be reflected by an equal change on the left side (GDP).

For each of the following spending decisions, explain how the affected variable (C, I, G, or NX) would change (increase or decrease in terms of dollars) and how the change in spending would affect the level of total GDP (increase or decrease in terms of dollars).

1. The federal government decides to invest \$1 billion in the nation's interstate highway system.  
Government spending (G) increases by \$1 billion; GDP increases by \$1 billion.
2. Widgets Incorporated spends \$15 million to expand a factory and buy new tools and equipment for its workers.  
Investment (I) increases by \$15 million; GDP increases by \$15 million.
3. Consumers cut spending by \$20 billion.  
Consumer spending (C) decreases by \$20 billion; GDP decreases by \$20 billion.
4. The state government cuts planned highway spending by \$30 million to maintain a balanced budget.  
Government spending (G) decreases by \$30 million; GDP decreases by \$30 million.
5. Changing currency values cause consumer spending on imports to increase by \$300 million.  
Consumer spending (C) increases by \$300 million; but because these goods were imported (M), net exports (NX) decrease by \$300 million. GDP does not change.
6. A recession results in job losses. As a result, government spending on unemployment benefits increases by \$10 billion.  
If recipients of unemployment benefits spend all of the money, consumer spending (C) would increase by \$10 billion. GDP would also increase by \$10 billion. It might be tempting to count this as government spending (G), but remember that unemployment benefits are transfer payments. Spending on transfer programs is measured when the money is spent by the recipients on goods and services and is counted as consumption (C).

#### Note

<sup>1</sup> Council of Economic Advisers. "2013 Economic Report of the President"; <http://www.whitehouse.gov/administration/eop/cea/economic-report-of-the-President/2013>.



# Handout

Name \_\_\_\_\_ Period \_\_\_\_\_

The expenditure method for calculating GDP divides spending into four categories: consumption, investment, government spending, and net exports.

## Components

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## **Common Core State Standards**

### **Grades 6-12 Literacy in History/Social Studies and Technical Subjects**

- **Key Ideas and Details**

RH.11-12.1: Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.

RH.11-12.2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.

- **Craft and Structure**

RH.11-12.4: Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines *faction* in *Federalist* No. 10).