CHAPTER 1

Gross Domestic Product

Economics has received a bad rap. In the mid-nineteenth century, the great Scottish historian Thomas Carlyle dubbed this discipline "the dismal science," and jokes abound on Wall Street about economists being more boring than accountants. But truth be told, there is nothing more exciting than watching the newswire on a trading floor of a money-center bank minutes ahead of the release of a major market-moving economic report. One of the top excitement generators is the report on gross domestic product (GDP)—an indicator that is a combination of economics and accounting.

Economists, policy makers, and politicians revere GDP above all other economic statistics because it is the broadest, most comprehensive barometer available of a country's overall economic condition. GDP is the sum of the market values of all final goods and services produced in a country (that is, domestically) during a specific period using that country's resources, regardless of the ownership of the resources. For example, all the automobiles made in the United States are included in GDP—even those manufactured in U.S. plants owned by Germany's BMW and Japan's Toyota. In contrast, gross national product (GNP) is the sum of the market values of all final goods and services produced by a country's permanent residents and firms regardless of their location—that is, whether the production occurs domestically or abroad—during a given period. Baked goods produced in Canada by U.S. conglomerate Sara Lee Corporation, for example, are included in U.S. GNP, but not in U.S. GDP.

GDP is a more relevant measure of U.S. economic conditions than GNP, because the resources that are utilized in the production process are predominantly domestic. There are strong parallels between the GDP data and other U.S. economic indicators, such as industrial production and the Conference Board's index of coincident indicators (the coincident index), which will be explored in later chapters.

The GDP is calculated and reported on a quarterly basis as part of the national income and product accounts (NIPAs). The NIPAs, which were

developed and are maintained today by the Commerce Department's Bureau of Economic Analysis (BEA), are the most comprehensive data available regarding U.S. national output, production, and the distribution of income. Each GDP report contains data on the following:

- Personal income and consumption expenditures
- Corporate profits
- National income
- Inflation

These data tell the story of how the economy performed—whether it expanded or contracted—during a specific period, usually the preceding quarter. By looking at changes in the GDP's components and subcomponents and comparing these with changes that have occurred in the past, economists can draw inferences about the direction the economy might take in the future.

Of all the tasks market economists perform, generating a forecast for overall economic performance as measured by the GDP data is the one to which they dedicate the most time. In fact, the latest report on GDP is within arm's reach of most Wall Street economists. Because several departments in a trading institution rely on the economist's forecasts, this indicator has emerged as the foundation for all research and trading activity and usually sets the tone for all of Wall Street's financial prognostications.

Evolution of an Indicator

Measuring a nation's output and performance is known formally as *national income accounting*. This process was pioneered largely by Simon Kuznets, an economist hired by the U.S. Department of Commerce in the 1930s—with additional funding from the National Bureau of Economic Research (NBER)—to create an accurate representation of how much the U.S. economy was producing. Up until that time, there was no government agency calculating this most critical of economic statistics.

The initial national income estimates produced by Kuznets in 1934 were representations of income produced, measures of the national economy's net product, and the national income paid out, or the total compensation for the work performed in the production of net product. At that time, no in-depth breakdown of components existed. In fact, Kuznets didn't even have a detailed representation of national consumption expenditures. This was the first step of several in the creation of a formal method of national income accounting, yet it was still a far cry from today's highly detailed representation of the macroeconomy.

The result was the national income and product accounts. In addition to taking on this immense task, Kuznets reconstructed the national income accounts of the United States back to 1869. (He was awarded a Nobel Prize in Economics in 1971 in part for this accomplishment.) Kuznets's first research report, presented to Congress in 1937, covered national income and output from 1929 through 1935.

In 1947, the first formal presentation of the national income accounts appeared as a supplement to the July issue of the *Survey of Current Business*. This supplement contained annual data from 1929 to 1946 disseminated in 37 tables. These data were separated into six accounts:

1. National income and product account
2. Business sector income and product account
3. Government receipt/expenditure account
4. Foreign account
5. Personal income/expenditure account
6. Gross savings and investment account

Before the creation of the NIPAs, households, investors, government policy makers, corporations, and economists had little or no information about the complete macroeconomic picture. There were indexes regarding production of raw materials and commodities. There were statistics on prices and government spending. But a comprehensive representation of total economic activity wasn't available. In fact, the term *macroeconomy* didn't appear in print until 1939. Policy making without knowing the past performance of the economy, how it operated under different conditions and scenarios, or which sectors were weak and which were strong, was a daunting task. This may have been the reason for many of the economic-policy failures of the early twentieth century.

Many economists have laid the blame for the Great Depression of the 1930s on the Federal Reserve Board's failure to respond to the ebullient activity during the Roaring Twenties (sound familiar?). The Fed may have borne much of the responsibility, but very few, if any, have absolved the Federal Reserve of its failures on the grounds that it had insufficient information.

The Great Depression forced the government to develop some sort of national accounting method. World War II furthered the government's need to understand the nation's capacity, the composition of its output, and the general economic state of affairs. How could the government possibly plan for war without an accurate appreciation of its resources? Since that time the NIPAs have enabled policy makers to formulate reasonable objectives such as higher economic growth rates or lower inflation rates, as well as to formulate policies to attain these objectives and steer the economy around any roadblocks that might impede the attainment of these goals.

Digging for the Data

Tracking the developments in an economy as large and dynamic as that of the United States is not easy. But through constant revision and upgrading, a relatively small group of dedicated economists at the BEA accomplishes this huge task every quarter. Each quarterly report of economic activity goes through three versions, all available on the BEA web site, http://www.bea.gov. The first, frequently referred to as the *advance report*, comes one month after the end of the quarter covered, hitting the newswires at 8:30 a.m. (ET). So the GDP report pertaining to the first three months of the year is released sometime during the last week of April, the second quarter's advance report during the last week of July, the third quarter's in October, and the fourth quarter's during the last week of January of the following year. Because not all the data are available during this initial release, the BEA must estimate some series, particularly those involving inventories and foreign trade.

As new data become available, the BEA makes the necessary refinements, deriving a more accurate estimate for GDP. The second release, called the *preliminary report*, comes two months after the quarter covered—one month after the advance report—and reflects the refinements made to date. The last revision to the data is contained in the final report, which is released three months after the relevant quarter and a month after the preliminary report. The release dates for 2012 are shown in Exhibit 1.1.

Annual revisions are calculated during July of every year, based on data that become available to the BEA only on an annual basis, such as state and local government consumption expenditures. The BEA estimates these data on a quarterly basis via a judgmental trend based on annual surveys of state and local governments. Judgmental trends are quarterly interpolations of source data that are available only on an annual basis. Because the surveys are available on an annual basis, estimates can only be made during the annual revision.

EXHIBIT 1.1 2012 Release Schedule for GDP Reports

	2011: QIV	2012: QI	2012: QII	2012: QIII
Advance report	January 27	April 27	July 27	October 26
Second report (1st revision)	Feb 1	May 31	August 29	November 29
Third report (2nd revision)	March 29	June 28	September 27	December 20

Source: U.S. Department of Commerce, Bureau of Economic Analysis

As source data for the components of the accounts are continuously updated and revised, the components of the NIPAs must be updated to reflect these revisions. That's the primary function of the annual revision. Each of the three years' (12 quarters') worth of data is subject to revision during this annual updating. Every five years the BEA issues a so-called benchmark revision of all of the data in the NIPAs. This has typically resulted in considerable changes to the five years of quarterly figures.

Benchmark revisions are different from annual revisions in that they generally contain major overhauls to the structure of the report, definitional reclassifications, and new presentations of data. New tables need to be created to account for products that are developed. As the economy evolves, new goods and services come to market and therefore need to be accounted for. Obviously, there were times, for example, when CDs, microwave ovens, DVDs, and iPods didn't exist. Because the U.S. economy develops and produces these goods, there must be a place for their production to be recorded. All of the data—quarterly and annual—are revised during benchmark revisions.

Some Definitions

As noted previously, GDP is the sum of the market values of all final goods and services produced by the resources (labor and property) of a country residing in that country. This definition contains two particularly important terms: *final* and *produced*. When economists refer to final goods, they mean those goods produced for their final intended use, that is, as end products, not as component or intermediate parts in another stage of manufacture. As an example, consider that each year, the Goodyear Tire & Rubber Company produces some hundred million tires. Quite a number of these are created for distribution in retail and wholesale stores as replacements and spares, and these are counted as final goods. And although most tires are produced and delivered to automakers to be used on new automobiles, these are not counted as production, because we do not calculate the value of automobiles in the national accounts by summing the value of its components. In other words, we don't add the cost of the radio, the seats, the heating elements, the spark plugs, and so on. We count only the value of the final product, the automobile.

Obviously, the economists at the BEA would make a serious miscalculation if they counted all the tires sold by the automakers as part of their automobiles as well as those sold by the manufacturer to Walmart and Sears. The same holds true for the production of wool. BEA economists count only the wool purchased for final use. Because countless final uses exist for wool—sweaters, hats, blankets, and so on—the BEA would make the same double-counting error by adding the production of raw wool as well as the wool used in sweaters, blankets, and the like.

Let's consider the other important term, *produced*. Resales are not included in the accounts. Rightly so, the BEA has determined that because the pace of reselling is not indicative of the current pace of production, it shouldn't be included in the output figures.

Another segment of the economy that the BEA excludes from the GDP release is the activity that goes on off the books. This seems an obvious exclusion, but it's a big one. Believe it or not, some of the most conservative studies have set the size of the U.S. underground economy at around 10 percent of the official U.S. GDP (roughly $1.5 trillion in the third quarter of 2011). The BEA doesn't count or make any adjustments for non-state-sanctioned gambling, prostitution, trade in illegal drugs, fraud, the production and sale of counterfeit merchandise, and the like, because, officially, they don't exist—wink, wink, nudge, nudge. These activities aren't reported, so how can they be measured? Clandestine activity like this understandably can alter the estimate of several economic indicators, but none more than GDP.

GDP versus GNP

The NIPAs contain figures for both gross domestic product and gross national product. Before 1991, GNP was the benchmark for all economic activity in commentaries, reports, articles, and texts. GDP became the official barometer when the BEA decided that the measure was a better fit with the United Nations system of national accounts used by other nations, and so made international comparisons of economic growth easier.

GDP differs from GNP in what economists call *net factor income from foreign sources*: the difference between the value of receipts from foreign sources and the payments made to foreign sources. The table in Exhibit 1.2, based on data from the second GDP report of the third quarter of 2011, illustrates how the BEA quantifies this relationship in its GDP report.

The difference between the value of GDP and GNP is typically minuscule, usually less than 0.5 percent. In Exhibit 1.2, for example, GDP is approximately $15,181 billion and GNP $15,448 billion, a difference of about $267 billion, or 0.17 percent of GNP.

EXHIBIT 1.2 GNP Derived from GDP (QIII 2011 Second Report)

U.S. GDP		$15,180.9 billion
Plus income receipts from the rest of the world	+	$794.8 billion
Minus income payments to the rest of the world	–	$527.8 billion
Equals U.S. GNP	=	$15,447.9 billion

Source: U.S. Department of Commerce, Bureau of Economic Analysis

Calculating GDP: The Aggregate-Expenditure Approach

Every transaction in an economy involves two parties: a buyer and a seller. To calculate total economic activity, economists can focus either on the buyers' actions, adding together all the expenditures on goods and services, or on the sellers' actions, tallying the total income received by those employed in the production process. These two approaches correspond to the two methods of calculating the GDP: the aggregate-expenditure method, which is the more popular and the one used on most Wall Street trading floors, and the income approach. The totals reached by both measures should theoretically be the same. In practice, however, there are small differences.

To calculate GDP, the BEA uses the aggregate-expenditure equation:

$$\text{GDP} = \text{C} + \text{I} + \text{G} + (\text{X} - \text{M}),$$

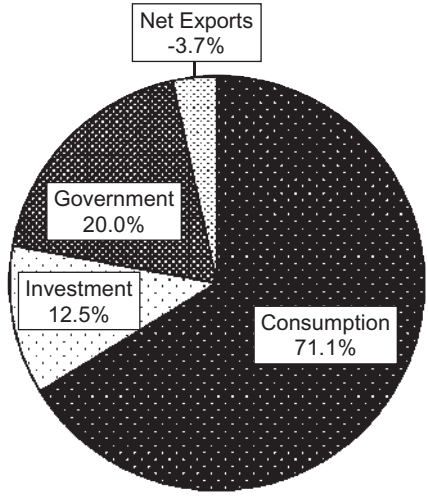
where *C* is personal consumption expenditures, *I* is gross private domestic investment, *G* is government consumption expenditures and gross investment, and (*X*–*M*) is the net export value of goods and services (exports minus imports). The identity expressed in this equation is probably the most widely cited of all economic relationships and appears in virtually all introductory macroeconomic texts.

Because the U.S. economy is extremely dynamic and susceptible to sudden and unforeseen influences like inclement weather and war, the percentage of GDP contributed by each of the equation's components varies over time, even from quarter to quarter. For the most part, though, the proportions don't deviate significantly from those represented in Exhibit 1.3, which depicts the composition of third quarter 2011 GDP.

Personal consumption expenditures (also referred to as *consumer spending* or simply *spending*) are the largest component of GDP, accounting for roughly two-thirds of total economic output. During the third quarter of 2011, consumer spending climbed to approximately 71 percent of GDP ($10.798 trillion divided by $15.181 trillion).

Consumer spending is the total market value of household purchases during the accounting term, including items such as beer, telephone service, golf clubs, CDs, gasoline, musical instruments, and taxicab rides. As shown in the table in Exhibit 1.4, these items fall into three categories: durable goods, nondurable goods, and services. Durable goods are those with shelf lives of three or more years. Examples include automobiles, refrigerators, washing machines, televisions, and other big-ticket items such as jewelry, sporting equipment, and guns. Nondurable goods are food, clothing and shoes, energy products such as gasoline and fuel oil, and other items such as tobacco, cosmetics, prescription drugs, magazines, and sundries. Services include housing, household operation, transportation, medical care, and recreation, as well as hairstyling, dry cleaning, funeral services, legal services, and education.

EXHIBIT 1.3 Composition of GDP



Source: U.S. Department of Commerce, Bureau of Economic Analysis

Services constitute by far the largest category of consumer purchases. They account today for roughly 66 percent of all consumer spending, up from a mere third in 1950. No wonder the United States is said to have a service-based economy. Spending on goods comprises the remaining 34 percent.

Nondurable goods is the second-largest category of expenditures, representing about 23 percent of the total. Durable goods expenditures, the most volatile component, account for the remaining 11 percent.

A more detailed summary of personal consumption expenditures is available on a monthly basis in the BEA's *Personal Income and Outlays* report, which is the direct source of data for this component of the GDP report. Personal income and outlays are discussed in Chapter 11.

Gross private domestic investment encompasses spending by businesses (on equipment such as computers, on the construction of factories and production plants, and in mining operations); expenditures on residential housing and apartments; and inventories. Inventories, which consist of the goods businesses produce that remain unsold at the end of a period, are valued by the BEA at the prevailing market price. This value fluctuates greatly from quarter to quarter, making the level of gross private domestic investment quite volatile. Accordingly, economists often look at fixed investment—gross private domestic investment minus inventories. This, in turn, has two major components, residential and nonresidential. The latter, which is also referred to as *capital spending*, includes expenditures on computers and peripheral equipment, industrial equipment, software, and nonresidential buildings such as plants and factories. The former

EXHIBIT 1.4 Consumer Spending Breakdown

	2011: QIII ($ in billions)	Percent of Total Spending
Consumer Spending	$10,798.7	100.0%
Goods	$3,660.1	33.9%
Durable Goods	$1,157.7	10.7%
Motor vehicles and parts	$368.9	3.4%
Furnishings and durable household equipment	$254.8	2.4%
Recreational goods and vehicles	$344.8	3.2%
Other	$189.1	1.8%
Nondurable Goods	$2,502.4	23.2%
Food and beverages off-premise consumption	$815.2	7.5%
Clothing and footwear	$352.0	3.3%
Gasoline and other energy goods	$434.6	4.0%
Other	$900.6	8.3%
Services	$7,138.6	66.1%
Household consumption expenditures	$6,855.9	63.5%
Housing and utilities	$1,938.7	18.0%
Healthcare	$1,760.8	16.3%
Transportation Services	$305.1	2.8%
Recreation services	$402.7	3.7%
Food services and accommodation	$685.6	6.3%
Financial services and insurance	$808.3	7.5%
Other	$954.7	8.8%
Final consumption nonprofits serving households	$282.6	2.6%
Gross output of nonprofits	$1,177.0	

Source: U.S. Department of Commerce, Bureau of Economic Analysis

comprises spending on the construction of new houses and apartment buildings and on related equipment.

Even without the volatile influence of inventories, investment spending is prone to extreme movements, because most of this activity is linked to the ever-changing interest-rate environment. Gross private domestic investment usually

accounts for 15 percent of GDP. During the third quarter of 2011, it represented 12.5 percent ($1.895 trillion divided by $15.181 trillion) of GDP.

Government consumption expenditures and gross investment covers all the money laid out by federal, state, and local governments for goods (both durable and nondurable) and services, for both military and nonmilitary purposes. The category includes spending on building and maintaining toll bridges, libraries, parks, highways, and federal office buildings; on compensation for government employees; on research and development, spare parts, food, clothing, ammunition; and on travel, rents, and utilities. Government expenditures and investment usually account for 20 percent of total GDP. During the third quarter of 2011, government consumption expenditures and gross investment did indeed account for about 20 percent of total economic activity ($3.047 trillion divided by $15.181 trillion).

Net exports of goods and services, the last component in the equation, is simply the difference between the dollar value of the goods and services the United States sends abroad (exports) and the dollar value of those it takes in across its borders (imports). Because the country generally imports more than it exports, this figure is usually negative, thus acting as a drag on economic growth. During the third quarter of 2011, net exports subtracted 3.7 percent from total economic activity (–$421.8 billion divided by $15.181 trillion).

Nominal and Real Numbers

The data reported in the GDP release are presented in two forms, nominal and real. *Nominal*, also known as *current-dollar*, GDP is the total value, at current prices, of all final goods and services produced during the reporting period. *Real*, or *constant-dollar*, GDP is the value of these goods and services using the prices in effect in a specified base year. Economists tend to prefer the real to the nominal measure. To understand why, consider a country that produces only two goods, pencils and vodka—a very interesting economy. If during Year 1, it sells two thousand pencils at $0.10 each and one thousand bottles of vodka at $5.00 a bottle (cheap vodka), its nominal GDP will be $5,200:

Pencils	2,000 × $0.10	=	$ 200
Vodka	1,000 × $5.00	=	$5,000
Norminal GDP			$5,200

Next year, the same country produces only a thousand pencils and five hundred bottles of vodka but doubles its selling prices, to $0.20 a pencil and $10.00 a bottle. Its nominal GDP is again $5,200:

Pencils	1,000 × $ 0.20	=	$ 200
Vodka	500 × $10.00	=	$5,000
Norminal GDP			$5,200

Is the economy larger during the second year? Did it produce the same amount? The difficulty in answering these questions illustrates the problem with nominal values. Economists have no way of telling whether it was the price or the quantity produced that increased, or by what magnitude. As more goods and services are considered, the problem gets bigger.

Real GDP is a more accurate indicator of changes in production. Referring to a base year eliminates the uncertainty of whether an increase in the value of the goods and services produced was the result of increased prices or of higher production. The table below shows how real GDP would be calculated in another country with two products—in this case, telescopes and hockey sticks.

To calculate Year 1 GDP, the quantities of the goods produced that year are multiplied by the prices at which they were sold and the results summed, to yield $6,000. For Year 2, instead of multiplying the quantities of goods produced by that year's prices—which would yield the nominal value—they are multiplied by their prices in the base year, Year 1. This yields a real, or inflation-adjusted, GDP of $7,650. According to this calculation, Year 2 GDP advanced a real $1,650 over Year 1 GDP:

	Year 1	*Year 2*
Telescopes	$10 \times \$100 = \$1{,}000$	$14 \times \$125 = \$1{,}400$
Hockey sticks	$200 \times \$25 = \$5{,}000$	$250 \times \$27 = \$6{,}250$
Nominal GDP	$6,000	Real GDP $7,650

Until 1996, the BEA used 1982 as the base year for calculating all real GDP estimates. Settling on one base year in this manner has the effect of imposing that year's price structure on subsequent periods and fixing the relative weights given the goods associated with these prices in the GDP calculation. The BEA found, however, that this fixed-weight approach introduced distortions: The further away a period under study was from the chosen base year, the more inflated its real GDP growth rate tended to be. For example, Karl Whelan, an economist at the Federal Reserve Board, has observed in a working paper that the growth rate of fixed-weight real GDP in 1998 was 4.5 percent when calculated using a base year of 1995, 6.5 percent using 1990 prices, 18.8 percent using 1980 prices, and an incredible 37.4 percent when 1970 is the base year.

The BEA constantly refines its measures. (That's part of the reason the economic statistics in the United States are better and more accurate than those in any other developed nation.) In the mid-1990s, the bureau decided it was time to refine its weighting method and in late 1995, adopted chain weighting. The chain-weighting process is far too complex for this introduction, but in essence, rather than hold constant a basket of goods and services, as in the fixed-weight system, it holds the utility of the basket constant, allowing substitution of cheaper for more expensive items. Moreover, the base year is moved forward as the estimate progresses through time. The result is a series of links, or a chain of estimates that minimizes deviations.

EXHIBIT 1.5 Third Quarter 2011 Consumption Expenditures ($ in billions)

	Nominal (Current Dollar)	Real Chained Dollar
Nondurable goods	$2,502.4	$2,073.2
Durable goods	$1,157.7	$1,277.1
Services	$7,138.6	$6,109.8
Total consumption	= $10,798.7	≠ $9,446.5

Source: U.S. Department of Commerce, Bureau of Economic Analysis

The primary drawback of using chain-weighted (chained) data is the loss of additivity. In the fixed-weight calculation, total real GDP measured in 1996 dollars was equal to the sum of its components valued in 1996 dollars, and the value of each component was equal to the sum of the values of its subcomponents. As illustrated in Exhibit 1.5, this is not the case when chain weighting is used. Note that when the real chained components are summed, they do not add up to the actual real chained-dollar total consumption figure of $9,446.5 billion.

Deflators

The difference between nominal GDP and real GDP is essentially inflation. It is thus possible to compute an economy's inflation rate from this difference. The result of the computation is called an *implicit price deflator*.

Every GDP report contains implicit price deflators for the headline GDP number and also for many of its subcomponents, such as consumption expenditures, government spending, and gross private domestic investment. Economists at the BEA calculate the GDP implicit price deflator using the following formula:

$$\text{Implicit deflator} = (\text{Nominal value}) / (\text{Real value}) \times 100$$

For example, using data from the 2011 third quarter GDP report, the GDP deflator for that period would be

$$(\$15.1809/\$13.3378) \times 100 = 113.81$$

The annualized inflation rate for a period can be derived using the formula:

$$\text{Annualized inflation} = (\text{Current-period deflator/Previous-period deflator})^4 - 1$$

To compute the annualized inflation rate for third quarter 2011, for example, the third quarter 2011 GDP deflator computed above and the second quarter 2011 deflator of 113.11 would be plugged into the formula, to give

$$\text{Annualized inflation rate} = (113.81/113.11)^4 - 1$$
$$= (1.006189)^4 - 1 = 1.024985 - 1 = 0.024985,$$
$$\text{or approximately } 2.5\%$$

A similar formula is used to calculate the annualized quarterly growth rate of GDP as a whole, as well as each of its components and subcomponents:

$$\text{Annualized quarterly growth rate} = (\text{Current quarter}/\text{Previous quarter})^4 - 1$$

For example, to compute the third quarter 2011 annualized growth rate, the second and third quarter 2011 GDP figures would be plugged into the formula, giving

$$\text{Annualized quarterly growth rate}$$
$$= [\text{QIII 2011 GDP} / \text{QII 2011 GDP}]^4 - 1$$
$$= [13{,}337.8/13{,}271.8]^4 - 1$$
$$= [1.020041] - 1$$
$$= 0.02004, \text{ or approximately } 2.00\%$$

National Income

As noted earlier, economic activity has two sides—expenditures and income—which correspond to two different ways of calculating GDP. The discussion so far has involved expenditures. The income side of the GDP calculation is not as sexy as the expenditure approach because it doesn't identify the industries or products that are being created. Traders tend to pay less attention to the factors involved in national income, but it is equally important. Investors, particularly equity traders, like to see the quarterly performance of their respective investment industries. For example, those traders heavily invested in software stocks want to know how software investment fared during the particular quarter. The income-determined approach of GDP calculations does not provide this perspective.

The sum of the incomes generated in the course of production is termed *national income*. Its primary components fall into the following categories:

- Compensation of employees (wages and salaries, plus supplements)
- Net interest
- Proprietors' income
- Rental incomes of persons
- Corporate profits

EXHIBIT 1.6 National Income ($ billions)

	Total Income	Percent of 2011:QIII
Compensation of employees	$8,249.6	61.41%
Wage and salary disbursements	$6,641.6	49.44%
Supplements to wages and salaries	$1,608.0	11.97%
Net interest and miscellaneous payments	$531.9	3.96%
and capital consumption adjustments	$1,115.0	8.30%
Rental income of persons with capital consumption adjustment	$406.4	3.03%
Corporate profits with inventory valuation and capital consumption adjustments	$1,977.4	14.72%
Less contributions for government social insurance	$1,035.1	7.70%
Business current transfer payments	$133.7	1.00%
Current surplus of government enterprises	–$14.5	–0.11%
National income	$13,434.6	100.00%

Source: U.S. Department of Commerce, Bureau of Economic Analysis

Exhibit 1.6 employs data from the BEA's third quarter 2011 report on GDP and identifies these components together with the percentage each contributes to total national income. Unlike expenditure-based GDP and its components, the income data are reported only in nominal terms—that is, they are valued only in current prices. They are also subjected to valuation adjustments.

Employee compensation accounts for roughly 65 percent of total national income. It comprises two parts. The largest is composed of wages and salaries, including commissions, tips, bonuses, and employer contributions to deferred-compensation plans such as 401(k)s. For the most part, the BEA estimates this component by multiplying employment in the Bureau of Labor Statistics' monthly *Employment Situation* report (described in Chapter 3) by earnings and the number of hours worked. The second component of compensation, accounting for approximately 12 percent of the total, is composed of so-called supplements, such as employer contributions for social and unemployment insurance.

Net interest is the interest that businesses, foreign corporations operating in the United States, life insurance companies, and several other related interest-disseminating sources pay out as part of the expense of operating, less the interest they receive. Interest payments on mortgages and on home-improvement and equity loans are considered business costs because the NIPAs treat home owner-

ship as a business. The BEA gathers most of the data for the net-interest calculation from Internal Revenue Service (IRS) tax returns, the Federal Reserve Board, regulatory agency annual reports, and the Department of Agriculture.

Other Income Categories

Three other categories—proprietors' income, rental income, and corporate profits—are usually tweaked through the application of an inventory valuation adjustment (IVA) and a capital consumption adjustment (CCAdj). The IVA adjusts for the data discrepancies that occur because some businesses value their inventories at their historical cost (that is, the cost at the time of initial acquisition) rather than at their current replacement cost, which is the BEA's method. The CCAdj is made because the method businesses use to account for depreciation—the reduction in value throughout the measurement period of income, profits, inventories, and goods—differs from that of national income accountants (the BEA). Because businesses have several methods of inventory accounting, including the BEA's CCAdj, the BEA has adopted the CCAdj as a more consistent and uniform inventory and capital consumption adjustment system. The IVA and CCAdj are two reasons that the income and the expenditure computations of GDP aren't the same.

Proprietors' income comprises the earnings of nonincorporated businesses (sole proprietorships and partnerships). The dollar amount of this income is calculated using IRS business tax returns, with inventory valuation and capital consumption adjustments. The category accounts for about 9 percent of total income.

Rental income is composed of the rents earned from residential and nonresidential property by people not primarily engaged in the real estate business, plus royalties received from copyrights and patents.

For *corporate profits,* the GDP report refers to several types. Pretax profits, also known as *book profits*, are what companies earn before paying taxes and distributing dividends to shareholders. Applying the IVA and CCAdj to this total results in profits from current production, termed *operating profits* in the business community. This is the corporate profits figure used in computing national income. Subtracting companies' tax liabilities from book profit gives after-tax profits. Exhibit 1.7, taken from the second GDP report of third quarter 2011, illustrates how the various corporate profit measures are related.

The corporate profits data are obtained from IRS tabulations, as well as from the Census Bureau's quarterly survey of corporate profits and publicly available corporate financial statements. Corporate profits account for approximately 12 percent of total national income.

Not every GDP report depicts corporate profits in the same detail as the table shown in Exhibit 1.7. Because corporate earnings reports are scattered throughout the quarter and IRS processing of corporate tax returns is rather lengthy,

EXHIBIT 1.7 Corporate Profits ($ in Billions)

Corporate Profits: Level and Percent Change								
	Billions of Dollars				Percent Change from Preceding Period			
	Seasonally Adjusted at Annual Rates				Quarterly Rates			
	2010:Q3	2010:Q4	2011:Q1	2011:Q2	2010:Q3	2010:Q4	2011:Q1	2011:Q2
Corporate profits with inventory valuation and capital consumption adjustments	1833.1	1857.4	1876.4	1937.6	2.6	1.3	1.0	3.3
Less: Taxes on corporate income	430.3	404.7	422.3	420.5	7.7	–5.9	4.3	–0.4
Equals: Profits after tax with inventory valuation and capital consumption adjustments	1402.8	1452.7	1454.1	1517.1	1.2	3.6	0.1	4.3
Net dividends	760.5	774.8	793.8	807.4	4.3	1.9	2.5	1.7
Undistributed profits with inventory valuation and capital consumption adjustments	642.3	677.9	660.3	709.6	–2.2	5.5	–2.6	7.5
Addenda for corporate cash flow:								
Net cash flow with inventory valuation adjustment	1688.9	1704.9	1726.0	1812.2	–3.5	1.0	1.2	5.0

Undistributed profits with inventory valuation and capital consumption adjustments	642.3	677.9	660.3	709.6	–2.2	5.5	–2.6	7.5
Consumption of fixed capital	1028.5	1038.3	1048.0	1063.1	0.5	0.9	0.9	1.4
Less: Capital transfers paid (net)	–18.0	11.3	–17.7	–39.4	…..	…..	…..	…..
Addenda:								
Profits before tax (without inventory valuation and capital consumption adjustments)	1844.5	1742.5	1877.1	1890.6	–1.1	–5.5	7.7	0.7
Profits after tax (without inventory valuation and capital consumption adjustments)	1414.2	1337.8	1454.8	1470.1	–3.5	–5.4	8.7	1.1
Inventory valuation adjustment	–32.0	–90.3	–116.0	–60.4	…..	…..	…..	…..
Capital consumption adjustment	20.5	205.2	115.4	107.3	…..	…..	…..	…..

Source: U.S. Department of Commerce, Bureau of Economic Analysis

accurate tallies are only possible months after the end of the quarter. The most complete presentation of corporate profits is usually provided in a year's final report of GDP.

GDP, GNP, and National Income

National income, as noted above, is the sum of all the incomes generated by the factors involved in production. This total does not equal the expenditure-determined GDP. To reach equality, several adjustments must be made. These adjustments are shown in Exhibit 1.8, which reproduces Table 9 of the third quarter 2011 GDP report.

One of the largest adjustments concerns the consumption of fixed capital. This is essentially the depreciation charge taken by private and government owners of fixed capital located in the United States, to account for the assets used up in the course of production. The amount of the charge is estimated by the BEA from IRS business tax returns and studies of resale prices of used equipment and structures.

The next group of adjustments involves various income measures such as proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, and corporate profits with inventory valuation and capital consumption adjustments. The BEA also adds taxes on production and imports less subsidies.

Another category consists of business current transfer payments—distributions that private (that is, nongovernmental) businesses make to individuals without any products changing hands or services being rendered. Two examples are charitable donations and liability payments made for personal injury. The BEA gets these data from IRS business tax returns, government agency reports, and other trade sources.

All these figures—for income, profits, taxes, and transfers—are added to national income. In contrast, the last category of adjustments, the current surplus of government enterprises, is subtracted. The subsidies referred to are the distributions that government agencies make to private businesses as well as to other levels of government, such as to the U.S. Postal Service.

After all these adjustments are made, net national income should equal the net national product (NNP). However, a difference, termed the *statistical discrepancy*, still remains—third quarter 2011 NNP, for instance, was $13.486 trillion and net national income was $13.435 trillion by the income-based calculation, a difference of $51.4 billion. This discrepancy reflects differences in the sources for data used in the two calculations. Those used in deriving national income are less directly observable, and so less reliable. As mentioned earlier, moreover, illicit expenditures are not reported or estimated.

This section of the chapter has described the multitude of figures included in the GDP report, how they are related to one another, and how they are

EXHIBIT 1.8 Relation of GDP, GNP, and National Income ($ in billions)

	2011 QIII
Gross domestic product	$15,180.9
Plus: Income receipts from the rest of the world	$794.8
Less: Income payments to the rest of the world	$527.8
Equals: Gross national product	$15,447.8
Less: Consumption of fixed capital	$1,961.9
Private	$1,606.7
Domestic business	$1,302.3
Capital consumption allowances	$1,626.2
Less: Capital consumption adjustment	$323.9
Households and institutions	$304.4
Government	$355.2
General government	$295.6
Government enterprises	$59.6
Equals: Net national product	$13,486.0
Less: Statistical discrepancy	$51.4
Equals: National income	$13,434.6
Less: Corporate profits with inventory valuation and capital consumption adjustments	$1,977.4
Taxes on production and imports less subsidies	$1,035.1
Contributions for government social insurance, domestic	$921.1
Net interest and miscellaneous payments on assets	$531.9
Business current transfer payments (net)	$133.7
Current surplus of government enterprises	–$14.5
Wage accruals less disbursements	$0.0
Plus: Personal income receipts on assets	$1,791.8
Personal current transfer receipts	$2,333.6
Equals: Personal income	$12,975.2

Source: U.S. Department of Commerce, Bureau of Economic Analysis

derived. Next come the nuts and bolts: how economists and traders use the report numbers in analyzing both big-picture issues, such as the future course of the business cycle, and smaller issues, such as when to put their money where.

What Does It All Mean?

The GDP report contains a wealth of information about the nation's economy. Each of its components tells a different story about a particular group, sector, industry, or activity. Not surprisingly, then, different market participants look at different sections and draw different inferences. Retail analysts, for instance, focus mostly on consumer spending. Those covering housing, construction, or real estate investment trusts (REITs) concentrate on the residential activity in investment spending. Defense-industry analysts focus on the national defense spending component of government consumption expenditures and gross investment. Fixed-income analysts and investors, ever wary of the eroding effects of inflation, concern themselves with the GDP deflators and GDP growth rate. Traders, who are always on the lookout for possible market movers, watch for numbers that contradict expectations, which they track carefully, often jotting them down in notebooks kept at their desks, for quick reference when the real figures are announced.

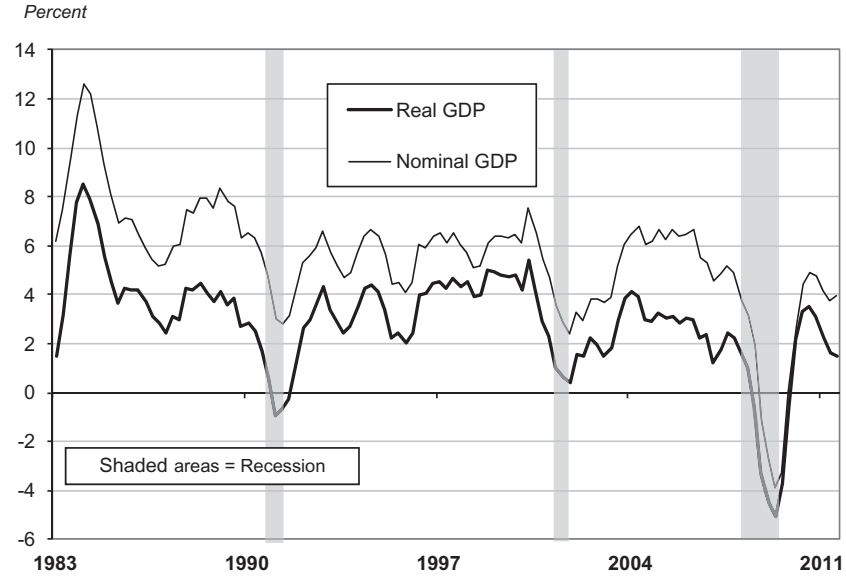
GDP Growth

The annualized quarterly growth rate of real GDP is the headline number of the GDP report. As with most economic figures, strong positive postings are generally good news for the economy, corporate profits, and stock valuations. Not so for bonds, however. Inflation erodes the value of fixed-income securities, and more torrid economic growth is usually associated with higher rates of inflation.

Market reactions—both positive and negative—are more pronounced when the announced numbers differ from the expected ones. The larger the difference, the greater the market move. Say the Street consensus for the third quarter was for an annualized GDP growth rate of 4.2 percent. On the one hand, a weak posting of between 1 and 2 percent would probably spark a sell-off in the stock market and boost the price of fixed-income securities, lowering yields. Stronger-than-expected growth of 5.5 to 6.5 percent, on the other hand, would be well received by equity traders and frowned upon by fixed-income dealers.

Although the annualized quarterly figure is important, many economists prefer to look at the year-over-year change in GDP. The longer perspective makes it easier to spot turning points in the economy, such as an approaching recession or an acceleration of activity. Exhibit 1.9 illustrates this predictive effect.

EXHIBIT 1.9 Real and Nominal GDP (Y/Y%)



Source: U.S. Department of Commerce, Bureau of Economic Analysis; National Bureau of Economic Research

As the chart shows, in the past 30 years the U.S. economy has experienced three recessions—in 1990–1991, 2001, and 2007–2009—each of which was preceded by significant declines in the growth rates of real and nominal GDP. Note that during the 1990–1991 recession, the real GDP growth rate fell below zero, while the nominal rate declined but stayed out of negative territory—a common occurrence during most post–World War II downturns. This is because the nominal figure incorporates the effects of inflation, which is almost always rising. For the growth rate of nominal GDP to become negative, the inflation rate would have to be negative (reflecting a decline in prices)—a condition known as deflation—at the same time that the economy is contracting. Deflation is extremely rare in the United States and indeed has been recorded only a couple of times anywhere.

During the 2007–2009 recession, the real and nominal measures of GDP contracted—the steepest declines in economic output since the Great Depression. This slump was accompanied by a mild case of deflation.

On average, the year-over-year growth rate in GDP starts declining four to five quarters before a recession. Not all slowdowns, however, result in recession. By the time the warning signals appear, government policy makers have usually put in place measures to avert an economic downturn. The massive stimulus

enacted at the onset of the financial crisis and recession in 2008 no doubt helped the U.S. economy avoid a deep depression.

Still, watching changes in year-over-year GDP growth can be useful for short-term forecasts: Very rarely do trends reverse immediately. It takes a great deal to knock a $15 trillion economy like that of the United States off kilter. Luckily for those in the financial markets, several leading indicators usually send alerts when the behemoth is running out of energy.

To form a clearer picture of the economy, economists like to look at several indicators at once. This helps reduce the transmission of false signals. There are times when some individual indicators trend lower, suggesting a potential decline in activity. If several indicators are observed, and a majority point to positive activity, then it is possible to dismiss the weaker performing indicators as outliers, and draw the conclusion that the economy isn't in trouble.

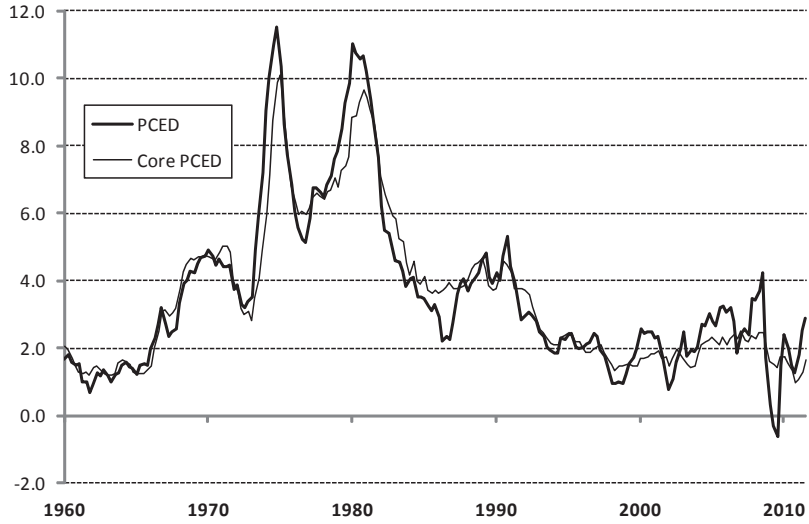
Deflators

If GDP growth is the most important number in the release, the GDP deflators run a close second. As indicators of inflation, these deflators are preferred to the consumer price index (CPI), the producer price index (PPI), and other commodity price gauges by many traders and economists, including those at the Federal Reserve. Special favorites are the *headline deflator*, or *implicit GDP deflator*, the *personal consumption expenditure deflator*, and the *personal consumption expenditures less food and energy deflator*, also known as the *core PCED deflator*. The Street has adopted the last deflator as an unofficial benchmark for the core rate of inflation. Bond traders in particular watch the deflators, knowing that greater-than-expected increases in these numbers usually depress fixed-income prices.

Why have the deflators superseded the other inflation measures? For starters, policy makers, traders, and investors in general want to see overarching economic trends, not smaller, more targeted ones. GDP deflators reflect price activity in the broader economy. The consumer price index, in contrast, is merely a "basket" of a few hundred goods and services, chosen by the Bureau of Labor Statistics. (For a fuller explanation of price activity and the core rate of inflation, see Chapter 12.)

Traders focus on movements in the personal consumption expenditure excluding food and energy deflator, commonly referred to as the *core PCED*. This inflation measure is preferred to most of the others as it measures the core, excluding food and energy, rate of inflation that consumers face. Because prices of food and energy can fluctuate greatly during the month, economists like to view price trends without these noisy readings. Also, because private individuals are doing the overwhelming majority of the economy's consumption and this indicator contains all of the goods and services consumed, as opposed to a couple

EXHIBIT 1.10 Personal Consumption Expenditure Deflators (Y/Y%)



Source: U.S. Department of Commerce, Bureau of Economic Analysis

of hundred as in the case with the consumer price index, the core PCED has risen to the top of the list of most watched inflation gauges.

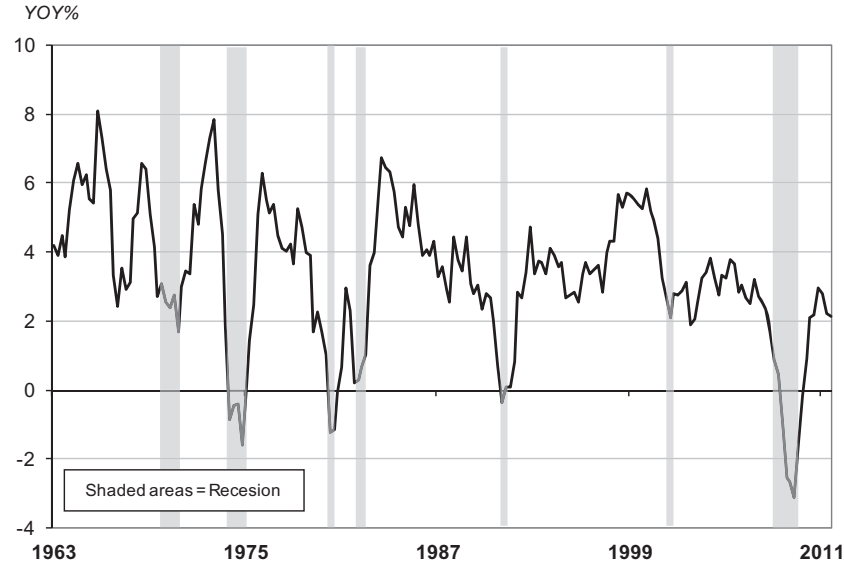
Exhibit 1.10 shows the 12-month trends in the personal consumption expenditure deflator (PCED) and the core PCED since 1960. The run-up in inflation from the mid-1970s through 1981 weighed heavily on the economy and made growth and hiring a difficult process. Since the Volcker Fed cracked down on inflation in 1979, the annual pace of price gains has been muted. The mild bout of deflation in 2009 can be seen by the sub-zero posting in the PCED.

Consumption Expenditures

As the consumer goes, so goes the U.S. economy. And this old saw may be more truthful than ever before. In the 1990s, it was believed that the consumer's utter resilience to disruptions such as war, attacks against the United States on U.S. soil, widespread corporate malfeasance, eight of the top 10 corporate bankruptcies in U.S. history, and presidential impeachment proceedings was the reason for the underlying strength of the economy. In previous decades, any single one of these disruptions likely would have upended the U.S. economy. Now it seems as though the consumer is capable of keeping the economy humming. It is the consumer who has prolonged expansion and made recessions shorter and milder.

In more recent years, consumers started to open their wallets relatively soon—about six months—after the end of the recession in June 2009. The pace of spending was somewhat subdued due to limited real income growth, poor

EXHIBIT 1.11 Personal Consumption Expenditures



Source: U.S. Department of Commerce, Bureau of Economic Analysis; National Bureau of Economic Research

employment prospects, and less access to credit cards, but their renewed spending is testament that American consumers can play Atlas and support macroeconomic recovery and expansion.

Generally, a drop in the growth rate of consumer spending is a surefire sign that the economy is on the verge of petering out. When people are feeling uneasy about the economic climate—perhaps unemployment is on the rise, or inflation is eroding the dollar's purchasing power, or individuals are just feeling tapped out—it shows in their spending habits. As the chart in Exhibit 1.11 shows, pronounced declines in the year-over-year growth in consumer expenditures have preceded each of the seven recessions in the United States since 1963. Traditionally, the first retrenchment occurs in purchases of big-ticket items, such as durable goods. So it is in that portion of consumer spending where you'll find early warnings of economic downturns. (For a more detailed discussion of consumer spending and its trends, see Chapter 11.)

Investment Spending

Capital equipment comprises all the industrial and technological items used to produce other goods and services for sale. The amount of money that companies invest in this equipment is thus a good predictor of future economic activity.

It indicates whether corporate profitability is accelerating or decelerating, how managers view future economic conditions, and how strong or weak the economy is.

As explained earlier, the Street tends to focus on fixed investment—gross domestic investment minus inventories. Of the two categories of fixed investment, residential and nonresidential (or capital spending), the former is by far the smaller, accounting for just 20 to 25 percent of the total. One shouldn't underestimate the influence of residential business investment, however. Traditionally it has represented roughly 5 percent of total economic output, and housing construction has a tremendous multiplier effect on the economy: Once a house or apartment building has been built, personal consumption expenditures usually receive a big boost as owners head out to paint, decorate, and furnish their homes.

That said, analysts and economists tend to pay more attention to nonresidential investment. In part, this is because of the component's size—it accounts for almost three-quarters of total fixed investment. It also provides a great deal of insight into how the corporate sector views economic conditions. Finally, many equity traders, especially those active in the NASDAQ and on the lookout for the next Microsoft or Intel, are particularly interested in technology investment, which falls into the nonresidential category.

A certain amount of nonresidential fixed investment is always required, regardless of the overall state of the economy. Equipment and machinery, for example, constantly need to be refurbished, updated, and repaired. Every year the auto industry shuts down its plants for about two weeks to allow engineers to retool machinery for upcoming new car models. Weather, overuse, and just plain wear and tear cause capital equipment to break down. During booming periods of technological advances, some capital equipment becomes obsolete. Upgrades often help a business raise its level of productivity, which in turn helps the company's bottom line.

Rising capital spending is generally associated with periods of solid corporate profitability and economic prosperity. For businesses to invest in new capital equipment, they need sufficient profit growth. After all, they can't spend what they don't have. (Actually businesses can spend or invest by borrowing via issuance of bonds. But if the company doesn't have respected profit growth, then the ability to obtain the financing is hampered. With a poor financial history, companies are saddled with low credit ratings and are forced to pay higher returns for borrowing those needed funds.)

Management also needs to be positive about the economic outlook. If conditions are soft and consumer demand is unpromising, they will be less inclined to purchase new machinery and equipment. If, however, the economy is expanding at a respectable pace, economic fundamentals are conducive to continuing growth (low interest rates, low inflation, firm labor market growth), and consumers are spending, then businesses will be more likely to pick up the pace of their investment.

Capital equipment is generally very costly—think of the specialized machinery on automakers' assembly lines, the ovens and packaging systems in food-processing plants, the industrial-size kilns of cement manufacturers. Companies thus usually need to borrow to purchase such equipment. So the amount of business investment is closely related to the level of interest rates: Lower rates ease spending; higher rates make it more difficult. Accordingly, the Federal Reserve can influence capital spending by altering its target for the federal funds rate, the rate banks charge each other for overnight loans used to meet reserve requirements. If the Fed wants to spark capital spending, it lowers the overnight rate. Over time, yields on the entire maturity spectrum, from 3-month Treasury bills to the 10-year Treasury note, decline as well, making it less expensive for businesses to finance costly investments such as new plants, factories, and equipment.

When investors realize that interest rates may be headed lower, whether as a result of slower inflation rates or the Federal Reserve's influence, they know that businesses are likely to pick up the pace of investment, because the financing of those products and services is going to be cheaper. To capitalize on such developments, traders might bid up the prices of those stocks that have their primary business in investment-related concerns like technology, machinery, tools, or capital equipment. Some of the more common companies that are involved in capital equipment include Cummins, Deere & Company, Paccar, Briggs & Stratton Corporation, Danaher Corporation, Dover Corporation, Eaton Corporation, Illinois Tool Works, Ingersoll-Rand Company, Parker Hannifin Corporation, and Leggett & Platt.

Government Spending

Wall Street doesn't generally pay much attention to government consumption expenditures and gross investment. One reason is that number's stability. Since 1947, government spending and investment has accounted for about 15 percent of total economic output. Only during periods of profound economic weakness or military conflict does the percentage rise, as the government picks up the pace of spending to boost economic growth or to support the war effort. In the post–World War II era, a peak of 24 percent was registered in 1953, at the end of the Korean War.

Within the government data, however, is one item to which some economists do pay attention, especially in recent times. That item is national defense spending. The long-term trend in national defense spending as a percentage of total government spending since the end of World War II has been consistently downward. Still, increases (in some instances, slight) have occurred when the government has ramped up purchases for military conflicts such as the Korean War in the early 1950s; Vietnam, in the mid-1960s to early 1970s; Desert Storm, in 1990; and most recently, the wars in Afghanistan and Iraq. Keep in mind that

government spending on national defense isn't limited to the increased output of aircraft, electronic tracking devices, and missiles. Greater defense spending raises the level of employment—everything from engineering positions to manufacturing positions. And because of security reasons, those jobs tend to stay here in the United States and are not shipped abroad, as so many other manufacturing positions have been in recent years.

Stock analysts responsible for the defense contractors and aerospace companies, such as Northrop Grumman Corporation, Raytheon Company, Lockheed Martin Corporation, General Dynamics Corporation, Curtiss-Wright Corporation, and the Boeing Company, find the detail on national defense expenditures in the report a treasure trove. The category is broken down into spending on aircraft, missiles, ships, vehicles, electronics and software, ammunition, petroleum, and compensation. If the government bought it, it is recorded here.

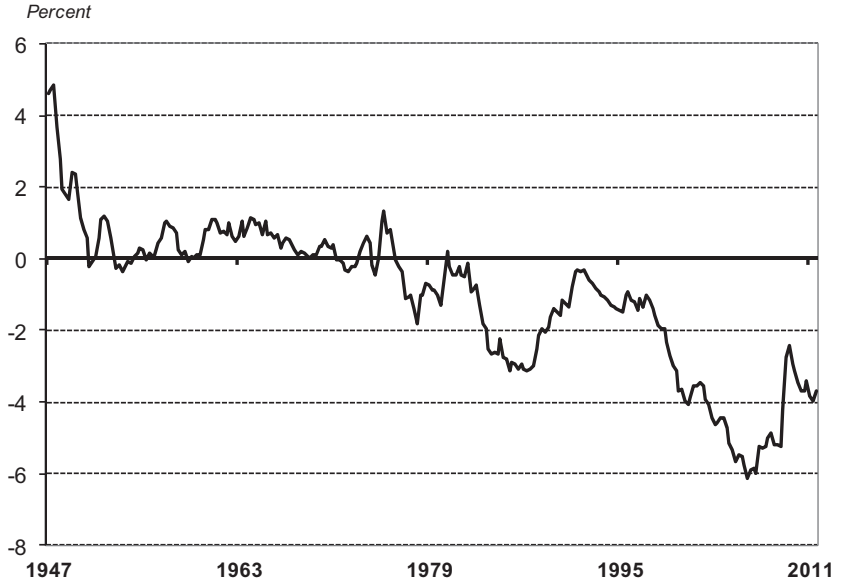
Net Exports

When the United States imports more than it exports—as has been the case for the better part of the past three decades—the net export balance is said to be in deficit. This reduces the level of GDP produced in a given period. Conversely, when exports outweigh imports, the trade balance is said to be in surplus. This results in an addition to economic activity. Such an outcome stands to reason, as U.S. export goods are produced by plants located in the United States, whereas imports are produced by foreign workers and sent to the United States. Exhibit 1.12 represents the value of net exports as a percentage of GDP. This percentage has been negative for a majority of the last 30 years, implying that the pace of imports is greater than that of exports, which reduces the level of domestic economic activity.

Imports needn't have a negative connotation, however. A number of resources are not as abundant in the United States as they are outside its borders. One obvious example is crude oil. The United States has domestic sources of oil but not enough to fuel its consumption. For that reason, it has to import about half its crude oil from foreign countries. Should we consider these imports disapprovingly? Probably not. The mere fact that the United States consumes so much crude is testament to its economic vitality. Its plants and factories need a great deal of oil to produce what is the largest output in the world, employing millions of people and creating an economic climate that permits its citizens to prosper like no others on Earth. Spending on imports to heat our homes, run our transportation system, and conduct business should not be considered a drag on prosperity but an enhancement.

As with government expenditures, the trading community has little reason to get excited about the net export balance. It's true that the business community frowns on widening trade deficits because increasing imports slow U.S. GDP growth. But rising imports also mean that U.S. businesses and households are

EXHIBIT 1.12 Net Exports as a Percentage of GDP



Source: U.S. Department of Commerce, Bureau of Economic Analysis

consuming more goods and services that they deem attractive. Nobody forces consumers to purchase Italian wine, Japanese cars, or Canadian lumber.

U.S. businesses and households purchase foreign-made goods for any number of reasons including, price, quality, size, and taste. The primary force behind demand for foreign-produced goods is simply desirability.

Furthermore, foreign-produced goods tend to be cheaper. Because many countries in the world, particularly China, India, and several Asian-Pacific nations, have relatively low-cost labor, they are capable of producing goods at lower costs. These low-priced products are usually sent to the United States, which influences the prices of similar U.S.-produced goods. This globalization has led to a lower inflation rate here in the United States—especially since the mid 1990s.

Perhaps the major reason investors ignore the trade data is the data's minor influence on total economic activity. Over the past 55 years, the net export position has averaged a mere half a percentage point of total economic output.

Final Sales

Included in the addenda to Table 1 in the GDP report are three measures little noted by the financial media but closely scrutinized by the trading community because of the insights they provide into the underlying spending patterns in the

GDP numbers. These three indicators are the final sales of domestic product, gross domestic purchases, and final sales to domestic purchasers.

Final sales of domestic product is a measure of the dollar value of goods produced in the United States in a particular period that are actually sold, rather than put into inventory. To calculate this figure, the BEA first computes the change in private inventories by comparing the current level of inventories with that of the previous period. This indicates how many goods have been added to businesses storage and thus how much of current production has remained unsold. This change in private inventories is then subtracted from GDP to give final sales. This is an important number, because it paints a more accurate picture than GDP of the current pace of spending in the economy. Economists say current pace because the quarterly figure excludes inventories that have been produced in previous quarters. Many times economists will compare the growth rates of GDP with those of final sales to determine whether economic growth is being driven by new production or by the consumption of goods that were previously produced and stored as inventories.

Gross domestic purchases measures all the goods U.S. residents have bought, no matter where the goods were produced. This figure is obtained by subtracting net exports from GDP. There is indeed a difference between GDP and gross domestic purchases. GDP is a measure of domestically produced goods and services, whereas gross domestic purchases is a measure of all the goods domestically purchased. Strong quarterly increases in gross domestic purchases generally imply solid demand by U.S. consumers, as only those purchases of domestic goods are calculated.

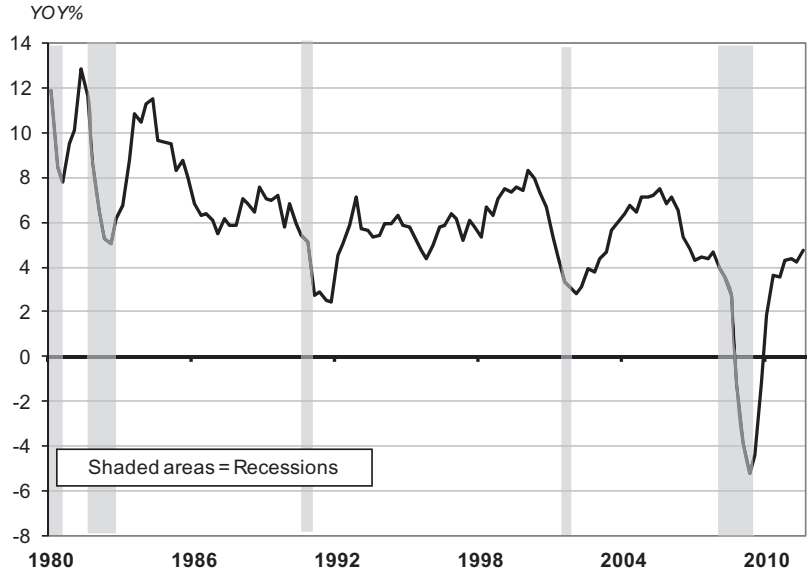
Final sales to domestic purchasers is the level of gross domestic purchases less the change in private inventories. It depicts the desire of Americans, both households and businesses, to spend, no matter where the goods or services are produced. Some economists consider it a good indicator of overall economic well-being. Slumping final sales to domestic purchasers suggests that U.S. consumers are tapped out.

Economists keep track of the year-over-year percentage change in final sales to domestic purchasers because of this measure's excellent record of foretelling periods of softer economic growth. As the chart in Exhibit 1.13 illustrates, each of the five recessions since 1980 was preceded by about a three-quarter-long decline in the year-over-year growth rate of final sales to domestic purchasers.

Corporate Profits

Market participants don't generally pay as much attention to the income side as to the expenditure side of GDP. That isn't to say the trends in wages and salaries aren't important to economists or to analysts who cover retail issues. What could be more telling about the future pace of spending, after all, than the amount of income earned by would-be consumers? It's just that the trends of

EXHIBIT 1.13 Final Sales to Domestic Purchasers



Source: U.S. Department of Commerce, Bureau of Economic Analysis; National Bureau of Economic Research

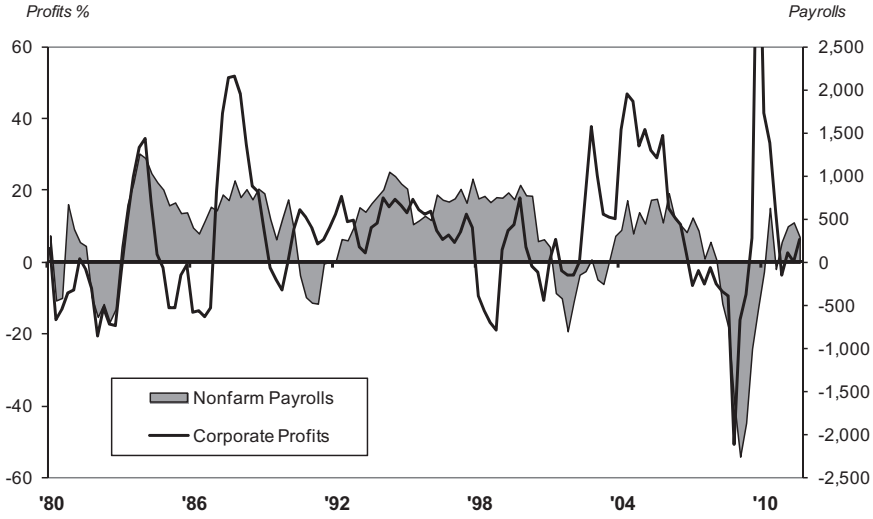
the expenditure side are accepted as being more accurate, because they aren't subject to inventory and capital consumption value adjustments, as the income-determined data are. Still, some income-side components can give valuable insights into economic trends. Among the most important of these are the measures of corporate profits.

As with most of the other measures discussed, a rise in corporate profits indicates a healthy business climate. The economy's growth cycle really starts with a lift in corporate profits. When businesses are successful, their incomes exceed costs, and they make profits. This permits them to invest in new capital equipment or employees.

Even more significant than pretax earnings are after-tax profits. From this figure, economists and analysts can judge how much money companies actually have to spend on new equipment or additional staff. As the chart in Exhibit 1.14 shows, businesses generally have shed workers when corporate profit growth contracts (below zero in the chart). The same holds true for business investment. After-tax corporate profits have generally declined approximately three quarters prior to periods of slowing economic growth or recessions.

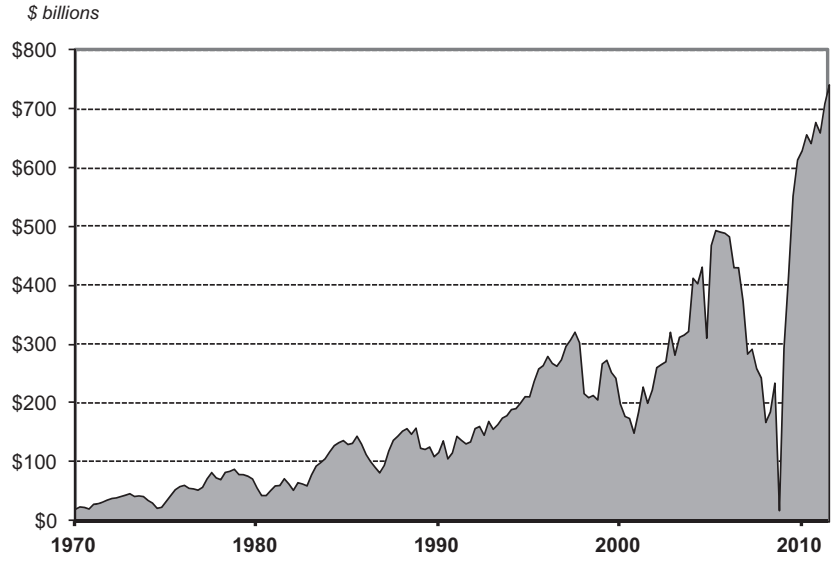
The best measure of the funds that companies have available for spending and hiring, however, is the level of undistributed profits. Undistributed profits are a company's earnings after tax payments and dividend distributions. One striking feature of the chart in Exhibit 1.15, which shows the amount of

EXHIBIT 1.14 After-Tax Corporate Profits (Y/Y%) and Payroll Growth



Source: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Labor, Bureau of Labor Statistics

EXHIBIT 1.15 Undistributed Profits



Source: U.S. Department of Commerce, Bureau of Economic Analysis

undistributed profits in the last third of the twentieth century and the first decade of the twenty-first century, is the paltry level of undistributed profits during the early 1970s, 1987, 2002, and in 2008 and 2009. All of these periods were associated with tumbling stock prices, high unemployment rates, and lackluster business investment.

The economic signals associated with corporate profits might not be as telling as they once were. As was noted earlier, in recent years the U.S. economy has become practically impervious to a whole host of negative influences that, if they had occurred in previous periods, would have resulted in recession and in some instances, quite possibly depression. Beginning in early 2001, the stock market bubble of the late 1990s burst, wiping out trillions of dollars in personal wealth. Widespread accounting scandals and egregious corporate impropriety also hammered investors' confidence, stalling the financial markets. For the first time in more than 50 years, the United States was attacked on its own soil, virtually paralyzing the economy. Hundreds of thousands of businesses closed for weeks, and the borders were sealed. Fear of anthrax attacks was widespread. As if all of this weren't enough, U.S. armed forces became engaged in military conflicts in Afghanistan and Iraq. Yet despite all these profoundly negative influences in a relatively short period, the economy managed to avoid a deep or prolonged recession. Perhaps the ultimate sign of resiliency is that consumer spending never fell in the 2001 recession.

In 2007 through 2009, it took the rare combination of a recession, war, a global credit collapse, and a deep housing crisis to finally bring consumers to their knees.

How to Use What You See

There aren't as many tricks associated with the national income and product accounts as with other economic series. One reason may be that these accounts are the benchmark of economic activity, and traders use other indicators to anticipate movements in GDP. In other words, the level of GDP is usually the variable that other indicators attempt to forecast or emulate. GDP is also released on a quarterly basis, and the economic associations and relationships it points to aren't as predictive as those expressed on a monthly or weekly basis. That said, Wall Street economists and policy makers do have one particularly useful strategy that employs data from the GDP report: calculating the output gap.

Tricks from the Trenches

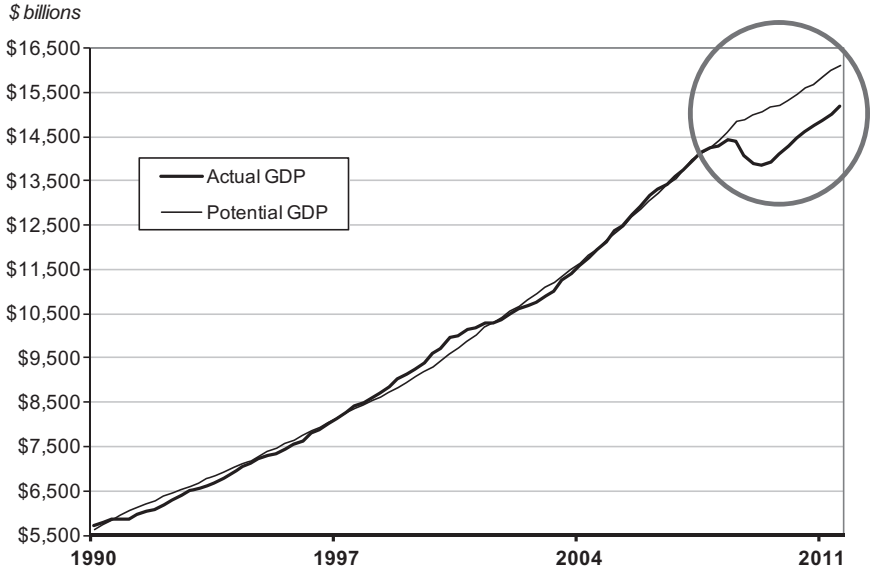
The *output gap* is the difference between the economy's actual and potential levels of production. This difference yields insight into important economic conditions, such as employment and inflation.

The economy's potential output is the amount of goods and services it would produce if it utilized all its resources. To determine this figure—the trend level—economists estimate the rate at which the economy can expand without sparking a rise in inflation. It is not an easy calculation, and it yields as many different answers as there are economists with different definitions for the maximum level of output, productivity, hours worked, and so on. Luckily, a widely accepted estimate of potential output is reported relatively frequently by the Congressional Budget Office (CBO). The CBO's web site, http://www.cbo.gov, contains information about its methodology and underlying assumptions in computing the trend level, as well as a detailed historical data set.

A negative output gap exists when actual GDP growth is below its estimated potential. This suggests that the economy isn't utilizing all its labor and capital resources. Such periods of underutilization are usually characterized by high unemployment and low inflation, with plants and factories closing down, workers furloughed, and machinery idled. The chart in Exhibit 1.16 depicts periods of above- and below-potential trends in GDP over the last 20 years.

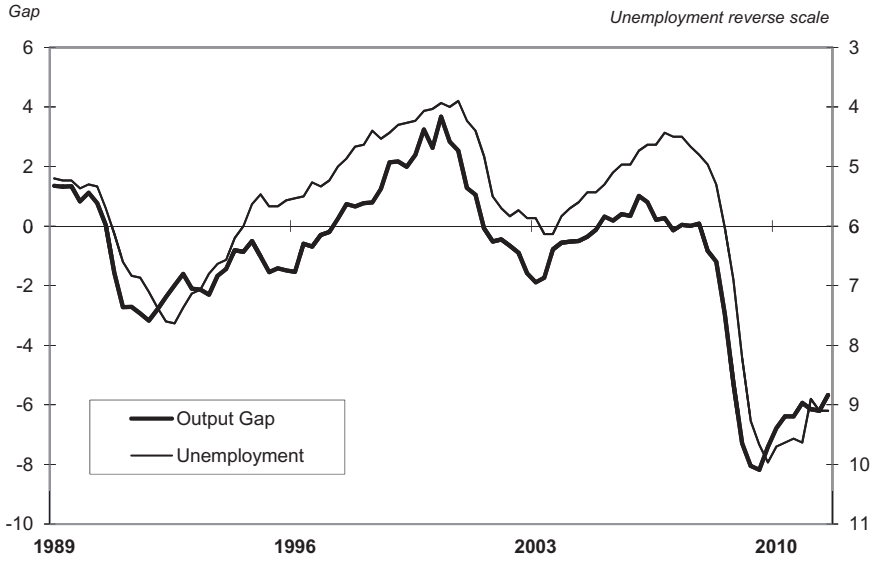
When GDP growth exceeds its calculated potential, creating a positive gap, the economy is pushed to its limit. All plants and factories are running at capacity, the labor force is fully employed, and economic output is skyrocketing. The chart in Exhibit 1.17 illustrates the relationship between a positive gap and

EXHIBIT 1.16 Actual and Potential GDP



Source: U.S. Department of Commerce, Bureau of Economic Analysis; Congressional Budget Office

EXHIBIT 1.17 Output Gap and Unemployment (Inverted Scale)



Source: U.S. Department of Commerce, Bureau of Economic Analysis; Bureau of Labor Statistics; Congressional Budget Office

falling unemployment. In periods of overutilization, such as 1997–2001, strains on the system develop, usually sparking inflation.

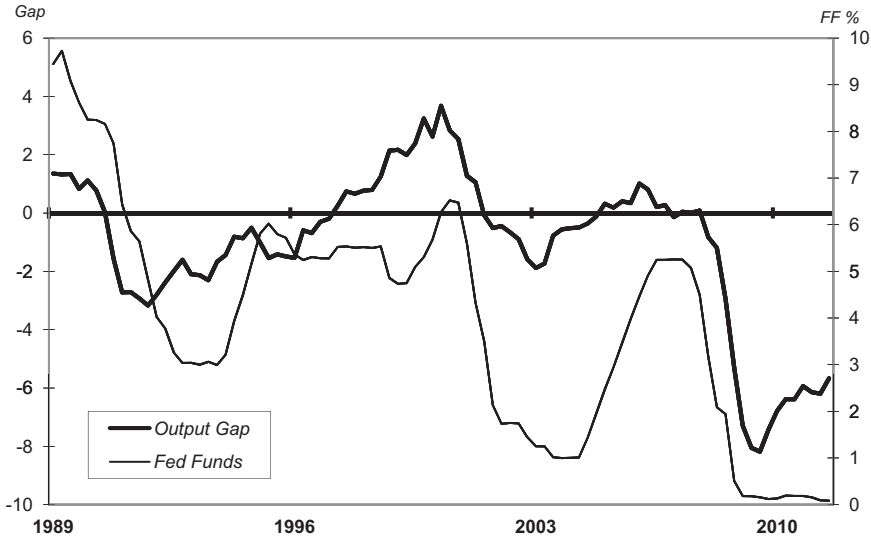
After the 1990–1991 recession, the jobs climate remained in the doldrums for several years. The economy started to accelerate in 1998, exceeding its potential in large part because of the surge in the stock market and the associated wealth effect. Then, after the dot-com bubble burst in 2000, the economy once again found itself in recession in 2001 with another jobless recovery.

It is easy to see the sizable collapse in economic output in 2008 and the cavernous gap between the economy's actual level of activity and its potential. It is unsurprising that the recovery continued to feel like an economy spinning its wheels despite the fact that the National Bureau of Economic Research called the end of the recession in June 2009.

Economists sometimes express the output gap in the form of a ratio derived by dividing the difference between actual output and potential output by potential output. When this ratio falls below zero, conditions are said to be soft, or sluggish; when it rises above zero, conditions are expansionary.

Because the output gap provides such telling economic insight into a whole host of economic relationships, it is a favorite of policy makers. The Federal Reserve, for example, considers it in determining where to set the federal funds rate. If the gap is negative, indicating that the economy is growing below its

EXHIBIT 1.18 Output Gap and Effective Fed Funds Rate



Source: U.S. Department of Commerce, Bureau of Economic Analysis; Federal Reserve Bank of St. Louis; Congressional Budget Office

potential, the Fed may try to spark activity by lowering the overnight rate. This traditionally results in a decline all along the maturity spectrum, making it easier for companies to fund capital projects. It also spurs individuals' spending by rendering loans to purchase items such as automobiles and homes more affordable. Conversely, when the gap is positive, indicating that the economic party is getting a bit out of hand, the Fed may take away the punch bowl by increasing its overnight target rate, thus discouraging consumers and businesses from spending and investing. The chart in Exhibit 1.18 illustrates the tendency of the federal funds rate to follow the output gap.

The severe contraction in the output gap in the wake of the 2007–2009 recession was one of the many reasons the Fed continued to keep its benchmark overnight target rate at or near zero for such a sustained period.

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