Components of GDP in 2012

COMPONENTS OF GDP (billions of dollars)		
Consumption		$11,150
Durable goods	$1,203	
Nondurable goods	2,567	
Services	7,380	
Investment		2,475
Business fixed investment	1,970	
Residential investment	439	
Change in business inventories	66	
Government purchases		3,167
Federal	1,296	
State and local	1,871	
Net Exports		–547
Exports	2,196	
Imports	2,743	
Total GDP		$16,245

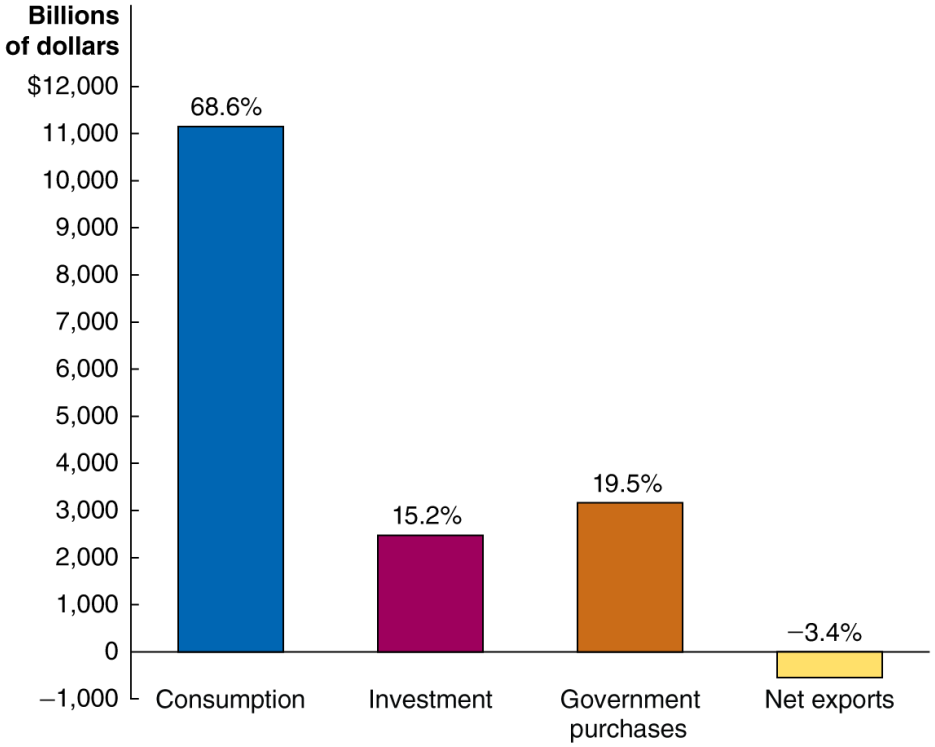

Figure 12.2 Components of GDP in 2012

Consumption is the largest component of GDP; within that, services are the largest component—almost half of GDP.

American net exports are negative, since the value of our imports exceeds the value of our exports.

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Measuring GDP Using the Value-Added method

An alternative method to measure GDP is to measure the **value added**: the market value a firm adds to a product.

The final selling price of a product must equal the sum of the values added to the product at each stage of production.

The table below illustrates this method for a shirt sold on L.L.Bean's web site.

Firm	Value of Product	Value Added		
Cotton farmer	Value of raw cotton = $1	Value added by cotton farmer	=	1
Textile mill	Value of raw cotton woven into cotton fabric = $3	Value added by cotton textile mill = ($3 − $1)	=	2
Shirt company	Value of cotton fabric made into a shirt = $15	Value added by shirt manufacturer = ($15 − $3)	=	12
L.L.Bean	Value of shirt for sale on L.L.Bean's Web site = $35	Value added by L.L.Bean = ($35 − $15)	=	20
	Total Value Added		=	**$35**

Table 12.1 Calculating value added

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Calculating Real GDP: An Example

The table shows output and prices in 2009 and 2015.

	2009		2015	
Product	Quantity	Price	Quantity	Price
Eye examinations	80	$40	100	$50
Pizzas	90	11	80	10
Textbooks	15	90	20	100

Calculating the total value of output in 2009 gives:

$3200 + $990 + $1350 = $5540.

To calculate real GDP in 2015, we use the prices from 2009.

Product	2015 Quantity	2009 Price	Value
Eye examinations	100	$40	$4,000
Pizzas	80	11	880
Textbooks	20	90	1,800

- This gives real 2015 GDP in 2009 dollars of $6680.

Most prices increased from 2009 to 2015, so using nominal GDP would have yielded a higher figure: $7800.

- This highlights the need to use real GDP to avoid exaggerating growth.

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The GDP Deflator

Economists and policy-makers are interested in the **price level**: a measure of the average prices of goods and services in the economy.

- Why? Stable prices are desirable because they allow households and firms to plan for the future appropriately.

In order to know whether we are achieving price stability, we need to *measure* the price level.

- One way to do this is using the **GDP deflator**: a measure of the price level, calculated by dividing nominal GDP by real GDP and multiplying by 100:

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

Since nominal and real GDP will be the same in the base year, the GDP deflator will be 100 in the base year.

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Calculating the GDP Deflator

The table on the right gives the values of nominal and real GDP for 2011 and 2012.

	2011	2012
Nominal GDP	$15,534 billion	$16,245 billion
Real GDP	$15,052 billion	$15,471 billion

We can use this to calculate the GDP deflator in each year:

Formula	Applied to 2011	Applied to 2012
$\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$	$\left(\frac{\$15{,}534\text{ billion}}{\$15{,}052\text{ billion}}\right) \times 100 = 103$	$\left(\frac{\$16{,}245\text{ billion}}{\$15{,}471\text{ billion}}\right) \times 100 = 105$

The GDP deflator increased from 103 to 105 between the two years. This is a 1.9% increase:

$$\left(\frac{105-103}{103}\right) \times 100 = 1.9\%$$

So we say the price level rose 1.9% over this period.

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National Income and Product Accounts (NIPA)

The BEA is charged with performing *national income accounting* for the United States. Each quarter, it publishes the *National Income and Product Accounts* tables.

These include GDP computations, but also:

Gross National Product (GNP)	Production performed by citizens of a nation, including overseas production (as opposed to GDP, which is performed within national borders)
National Income	GDP minus the *consumption of fixed capital*; i.e. GDP minus depreciation
Personal Income	Income received by households; includes transfer payments, but excludes firms' retained earnings
Disposable Personal Income	Personal income minus personal tax payments; this measures the amount that households are able to spend or save

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