

Building Blocks of Economics: GDP and Markets



Visuals are derived from Mankiw's, *Principles of Economics*, 6th edition.



In this session we will discuss the following information:

- What is Gross Domestic Product (GDP)?
- How is GDP related to a nation's total income and spending?
- What are the components of GDP?
- How is GDP corrected for inflation?
- Does GDP measure society's well-being?

Income and Expenditure

- **Gross Domestic Product (GDP)** measures total income of everyone in the economy.
- GDP also measures total expenditure on the economy's output of goods and services.

*For the economy as a whole,
income equals expenditure
because every dollar a buyer spends
is a dollar of income for the seller.*

The Circular-Flow Diagram

- a simple depiction of the macroeconomy
- illustrates GDP as spending, revenue, factor payments, and income
- Preliminaries:
 - **Factors of production** are inputs like labor, land, capital, and natural resources.
 - **Factor payments** are payments to the factors of production (e.g., wages, rent).

The Circular-Flow Diagram

Households:

- own the factors of production, sell/rent them to firms for income
- buy and consume goods & services

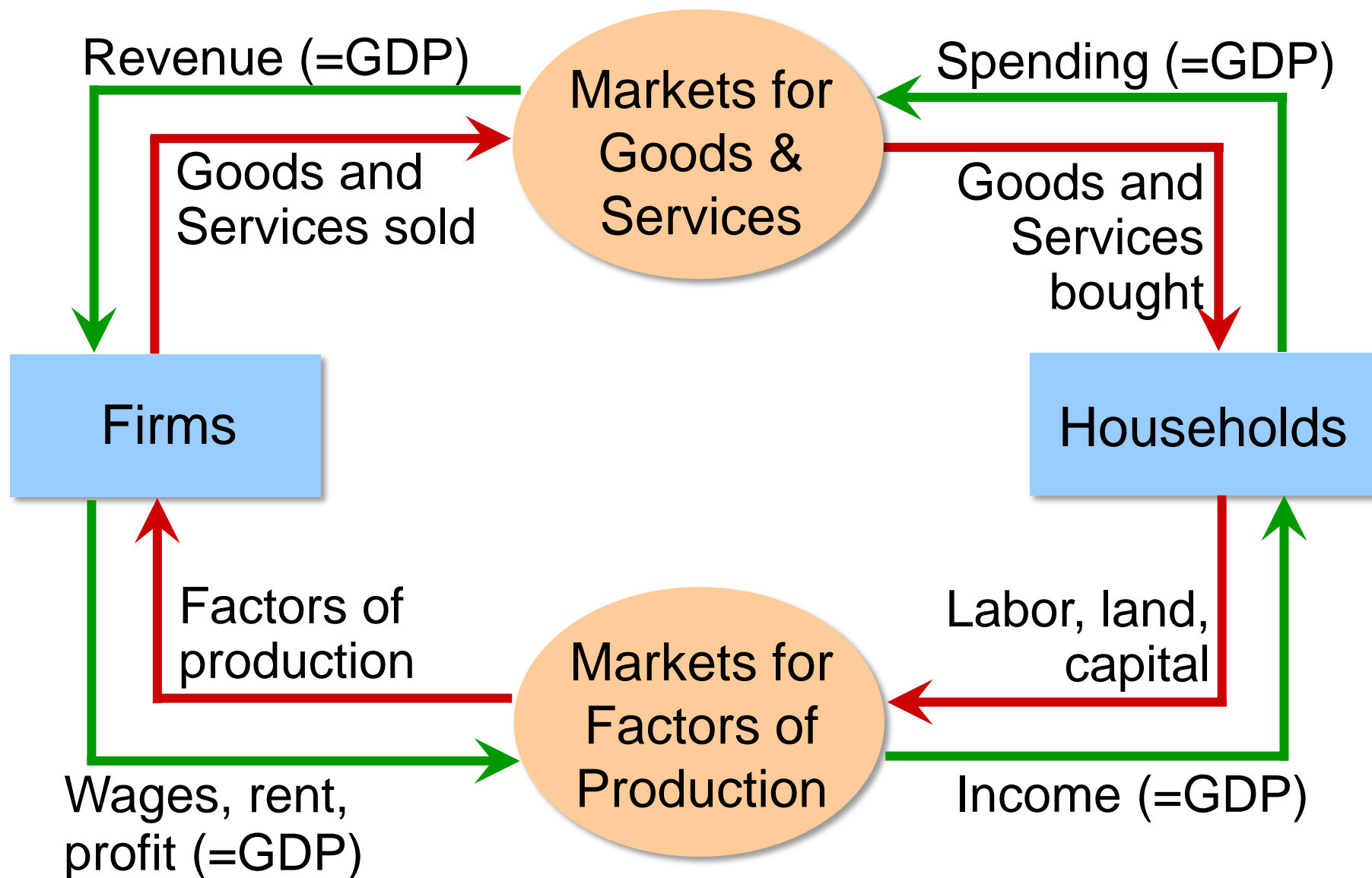
Firms

Households

Firms:

- buy/hire factors of production, use them to produce goods and services
- sell goods & services

The Circular-Flow Diagram



What This Diagram Omits

- The government
 - collects taxes, buys goods and services
- The financial system
 - matches savers' supply of funds with borrowers' demand for loans
- The foreign sector
 - trades goods and services, financial assets, and currencies with the country's residents

Gross Domestic Product (GDP) Is...

...the **market value** of all final goods & services produced within a country in a given period of time.

Goods are valued at their market prices, so:

- *All goods measured in the same units (e.g., dollars in the U.S.)*
- *Things that don't have a market value are excluded, e.g., housework you do for yourself.*

Gross Domestic Product (GDP) Is...

...the market value of all **final** goods & services produced within a country in a given period of time.

***Final goods:** intended for the end user*

***Intermediate goods:** used as components or ingredients in the production of other goods*

GDP only includes final goods – they already embody the value of the intermediate goods used in their production.

Gross Domestic Product (GDP) Is...

...the market value of all final goods & services produced within a country in a given period of time.

*GDP includes tangible goods
(like DVDs, mountain bikes, soda)
and intangible services
(dry cleaning, concerts, cell phone service).*

Gross Domestic Product (GDP) Is...

...the market value of all final goods & services produced within a country in a given period of time.

GDP includes currently produced goods, not goods produced in the past.

Gross Domestic Product (GDP) Is...

...the market value of all final goods & services produced within a country in a given period of time.

GDP measures the value of production that occurs within a country's borders, whether done by its own citizens or by foreigners located there.

Gross Domestic Product (GDP) Is...

...the market value of all final goods & services produced within a country in a given period of time.

Usually a year or a quarter (3 months)

The Components of GDP

- Recall: GDP is total spending.
- Four components:
 - Consumption (**C**)
 - Investment (**I**)
 - Government Purchases (**G**)
 - Net Exports (**NX**)
- These components add up to GDP (denoted **Y**):

$$\mathbf{Y = C + I + G + NX}$$

Consumption (C)

- is total spending by households on goods and services.
- Note on housing costs:
 - For renters, consumption includes rent payments.
 - For homeowners, consumption includes the imputed rental value of the house, but not the purchase price or mortgage payments.

Investment (I)

- is total spending on goods that will be used in the future to produce more goods.
- includes spending on
 - capital equipment (e.g., machines, tools)
 - structures (e.g. factories, office buildings, houses)
 - inventories (goods produced but not yet sold)

*Note: “**Investment**” does not mean the purchase of financial assets like stocks and bonds.*

Government Purchases (G)

- is all spending on the goods and services purchased by government at the federal, state, and local levels.
- **G** excludes **transfer payments**, such as Social Security or unemployment insurance benefits.
They are not purchases of goods and services

Net Exports (NX)

- **NX** = exports – imports
- Exports represent foreign spending on the economy's goods and services.
- Imports are the portions of **C**, **I**, and **G** that are spent on goods and services produced abroad.
- Adding up all the components of GDP gives:

$$\mathbf{Y = C + I + G + NX}$$

U.S. GDP and Its Components, 2011

	<i>billions</i>	<i>% of GDP</i>	<i>per capita</i>
Y	\$15,321.0	100.0	\$49,140
C	10,909.0	71.2	34,987
I	1,899	12.4	6,093
G	3,095	20.2	9,926
NX	-582	-3.8	-1,867

2012 GDP (estimated): 15,829.0 billion

ACTIVE LEARNING 1

GDP and its components

In each of the following cases, determine how much GDP and each of its components is affected (if at all).

- A.** Debbie spends \$200 to buy her husband dinner at the finest restaurant in Boston.
- B.** Sarah spends \$1800 on a new laptop to use in her publishing business. The laptop was built in China.
- C.** Jane spends \$1200 on a computer to use in her editing business. She got last year's model on sale for a great price from a local manufacturer.
- D.** General Motors builds \$500 million worth of cars, but consumers only buy \$470 million worth of them.

ACTIVE LEARNING **1**

Answers

A. Debbie spends \$200 to buy her husband dinner at the finest restaurant in Boston.

Consumption and GDP rise by \$200.

ACTIVE LEARNING **1**

Answers

- B.** Sarah spends \$1800 on a new laptop to use in her publishing business. The laptop was built in China.

Investment rises by \$1800, net exports fall by \$1800, GDP is unchanged.

ACTIVE LEARNING **1**

Answers

C. Jane spends \$1200 on a computer to use in her editing business. She got last year's model on sale for a great price from a local manufacturer.

Current GDP and investment do not change, because the computer was built last year.

ACTIVE LEARNING 1

Answers

D. General Motors builds \$500 million worth of cars, but consumers only buy \$470 million of them.

*Consumption rises by \$470 million,
inventory investment rises by \$30 million,
and GDP rises by \$500 million.*

GDP versus GNP

- **Gross national product (GNP).** The market value of goods and services produced by labor and property supplied by U.S. residents, **regardless of where they are located.** It was used as the primary measure of U.S. production prior to 1991, when it was replaced by gross domestic product (GDP).
- There is generally less than 1% difference between GDP and GNP price levels.

Real versus Nominal GDP

- Inflation can distort economic variables like GDP, so we have two versions of GDP:
One is corrected for inflation, the other is not.
- **Nominal GDP** values output using current prices. It is not corrected for inflation.
- **Real GDP** values output using the prices of a *base year*. Real GDP is corrected for inflation.

GDP and Economic Well-Being

- *Real GDP per capita is the main indicator of the average person's standard of living.*
- But GDP is not a perfect measure of well-being.

GDP Does Not Represent:

- the quality of the environment
- leisure time
- non-market activity, such as the child care a parent provides his or her child at home
- an equitable distribution of income

Then Why Do We Care About GDP?

- Having a large GDP enables a country to afford better schools, a cleaner environment, health care, etc.
- Many indicators of the quality of life are positively correlated with GDP. For example...

Bureau of Economic Analysis

■ www.bea.gov

The screenshot shows the Bureau of Economic Analysis website. A red circle labeled '4' highlights the 'Interactive Data' link in the top navigation bar. Another red circle labeled '1' highlights the 'Gross Domestic Product (GDP)' link under the 'National' category. A third red circle labeled '2' highlights the 'GDP by State and Metropolitan Area' link under the 'Regional' category. A fourth red circle labeled '3' highlights the 'Annual Industry Accounts (GDP by Industry & Input-Output Accounts)' link under the 'Industry' category.

U.S. Department of Commerce
Bureau of Economic Analysis

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U.S. Economic Accounts

1 National **Gross Domestic Product (GDP)** • Personal Income and Outlays • Consumer Spending • Corporate Profits • Fixed Assets • Research and Development Satellite Account

2 Regional • GDP by State and Metropolitan Area • State and Local Area Personal Income • RIMS II Regional Input-Output Multipliers • Economic Information for Coastal Areas

3 Industry • Annual Industry Accounts (GDP by Industry & Input-Output Accounts) • Benchmark Input-Output Accounts • Research and Development Satellite Accounts • Travel and Tourism Satellite Accounts • Supplemental Statistics

Latest Release 2/8/2013
Int'l Trade in Goods and Services

Real GDP 1/30/2013
-0.1% in Q4 2012

Personal Income 1/31/2013
2.6% in December 2012

Int'l Trade in Goods and Services 2/8/2013
Deficit decreased to \$38.5 billion in December 2012(p) from \$48.6 billion in November 2012 (r).

U.S. Int'l Transactions 12/18/2012
Current-account deficit decreased \$10.6 billion to \$107.5 billion in Q3 2012(p).

News Release Schedule

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Current Releases
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Information For...
Media
Congressional Users
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Job Seekers

Publications
Survey of Current Business
Papers by Topic
BEA Customer Guide

The Classroom Economist

- <http://www.frbatlanta.org/edresources/classroomeconomist>

▼ Gross Domestic Product (GDP)

In this edition, the Classroom Economist discusses gross domestic product (GDP): what it is, how to measure it, and what it means to a country's economy.

 [An Economist's Perspective](#)

 [Lesson demonstration](#)

[Lesson](#) (216 KB PDF) | [Presentation](#) (1.71 MB PDF)

[PowerPoint Lesson](#)

[SMART Board Lesson on GDP](#) (notebook, 2.5 MB)

[Lesson procedures](#) (63 KB PDF)

[Test Your Knowledge](#)

 [The Fed Explains Real Versus Potential GDP](#)

[Resources Guide](#)





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The Fed Explained: The Fed Explains Real Versus Potential GDP

- <http://www.frbatlanta.org/about/fedexplained/>





Online Student Learning Modules

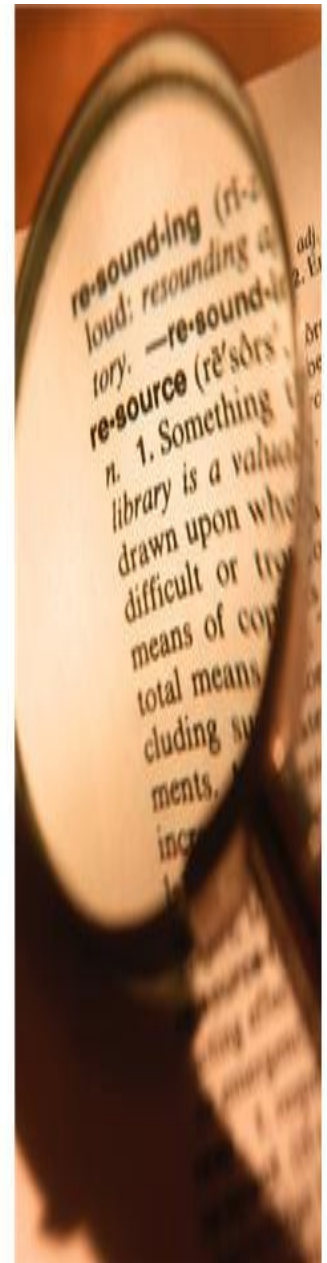
- **GDP and Pizza**

http://www.stlouisfed.org/education_resources/gdp-and-pizza-online-course

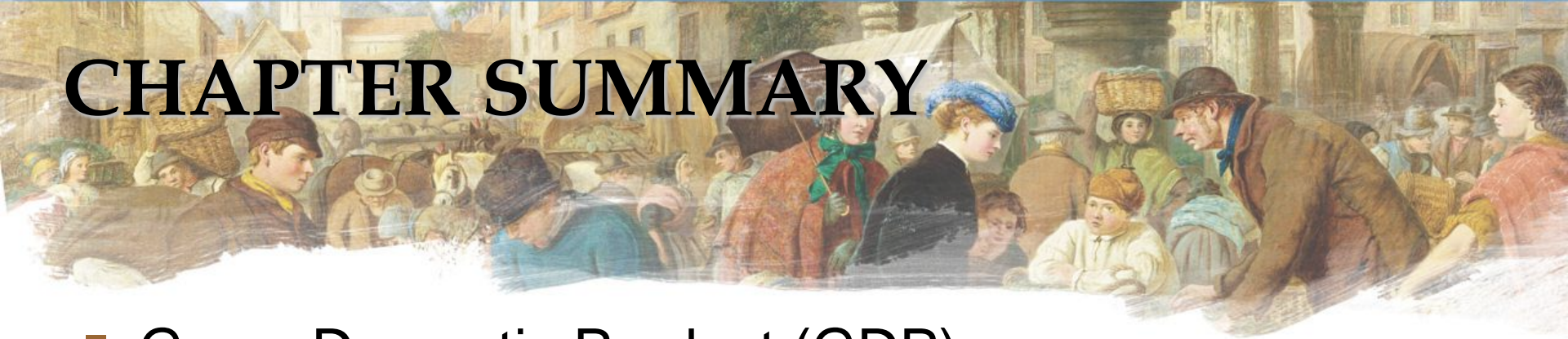
- **Great Depression - Lesson 1: Measuring the Great Depression**

http://www.stlouisfed.org/education_resources/great-depression-online-course/

- Additional resources are included on the GDP related resources handout



CHAPTER SUMMARY



- Gross Domestic Product (GDP) measures a country's total income and expenditure.
- The four spending components of GDP include: Consumption, Investment, Government Purchases, and Net Exports.
- Nominal GDP is measured using current prices. Real GDP is measured using the prices of a constant base year and is corrected for inflation.
- GDP is the main indicator of a country's economic well-being, even though it is not perfect.