

Exercise walk-through

# 2.1

## The Circular Flow and GDP

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AP Macroeconomics

## GDP: one number for total output

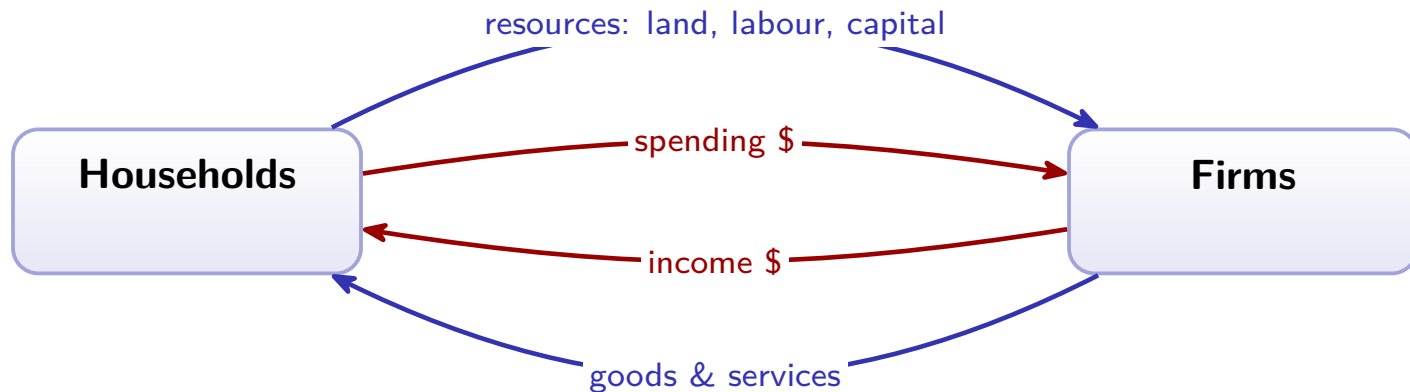
**Gross domestic product** : market value of final output produced inside a country in one year.

### One loaf, three producers: fictional dollars

| Producer          | Sale | Value added     |
|-------------------|------|-----------------|
| Farmer: grain     | 2    | 2               |
| Mill: flour       | 5    | $5 - 2 = 3$     |
| Bakery: bread     | 8    | $8 - 5 = 3$     |
| Total value added |      | $2 + 3 + 3 = 8$ |

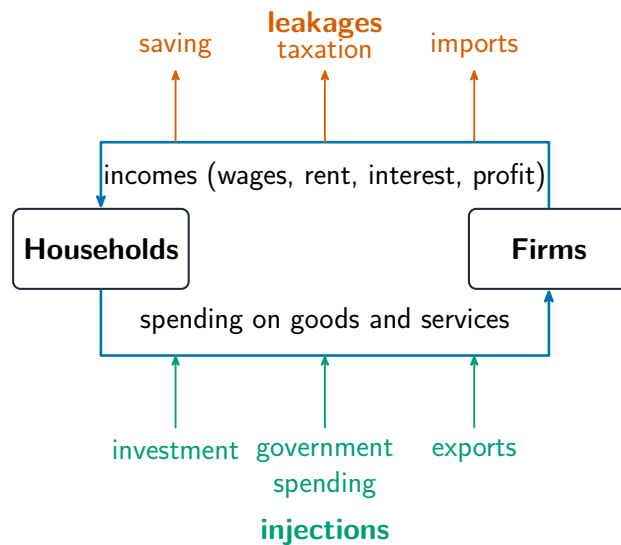
Final expenditure is \$8; value added and income generated also total \$8. Adding all sales gives \$15 and double counts.

# The circular flow model



Spending on current production generates income, so **total spending = total income**.

# The circular flow of income



The circular flow of income, with its leakages and injections

# The circular flow, and the four spending categories

## Circular-flow model

The **circular-flow model** : households supply factors and buy goods; firms buy factors and sell goods. One side's spending is the other's income.

## Consumption and investment

$C$  is household spending;  $I$  is firms' spending on capital, plus new housing and inventory changes.

## Government purchases

**Government purchases**  $G$  counts spending on goods and services – *not* transfer payments, which buy nothing new.

## Net exports

$X - M$ . Imports are subtracted because they were produced elsewhere, so  $GDP = C + I + G + (X - M)$ .

**Gross domestic product (GDP)**  
services produced within a country in a year.

is the market value of all *final* goods and

# Measuring GDP by spending

## The expenditure approach

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

consumption, investment, government, net exports. Subtract imports  $M$  – made abroad.

### Left out on purpose:

- **intermediate goods** – avoid double-counting
- **used goods** – counted when new
- **stocks & bonds** – nothing new made

## Worked example (\$b)

$$C = 700, \quad I = 200, \quad G = 300, \\ X = 150, \quad M = 100.$$

$$\text{GDP} = 700 + 200 + 300 + (150 - 100)$$

$$\text{GDP} = \$1,250 \text{ billion}$$

Net exports  $(X - M) = +50$ : sold more abroad than bought.

## Exercises 2.1-2.3

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**2.1** Define GDP.

[1]

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**2.2** Write the expenditure-approach formula for GDP.

[1]

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**2.3** Given  $C = 500$ ,  $I = 150$ ,  $G = 250$ ,  $X = 80$ ,  $M = 100$  (all in billions), find GDP. [2]

## Exercises 2.1-2.3

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2.1 Define GDP.

[1]

2.1

- the market value of all final goods and services produced within a country in a given period

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2.2 Write the expenditure-approach formula for GDP.

[1]

2.2

- $GDP = C + I + G + (X - M)$

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2.3 Given  $C = 500$ ,  $I = 150$ ,  $G = 250$ ,  $X = 80$ ,  $M = 100$  (all in billions), find GDP. [2]

2.3

- $GDP = 500 + 150 + 250 + (80 - 100) = 880$  billion

## Exercises 3.1-3.2

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3.1 GDP measures the value of

[1]

☐

A all goods ever produced

B final goods and services produced in a period

C intermediate goods only

D used goods

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3.2 Which of these is **excluded** from this year's GDP?

[1]

☐

A a newly built car

B a haircut

C the resale of a used car

D a restaurant meal

## Exercises 3.1-3.2

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3.1 GDP measures the value of

[1]

☐

A all goods ever produced

B final goods and services produced in a period

C intermediate goods only

D used goods

3.1 B

- final goods and services produced in a period.

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3.2 Which of these is **excluded** from this year's GDP?

[1]

☐

A a newly built car

B a haircut

C the resale of a used car

D a restaurant meal

3.2 C

- a used-car resale was counted when first sold

## Exercise 3.3 (a)

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**3.3** An economy has  $C = 700$ ,  $I = 250$ ,  $G = 350$ , exports = 120, imports = 170 (all in billions).

(a) Find net exports.

[1]

## Exercise 3.3 (a)

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**3.3** An economy has  $C = 700$ ,  $I = 250$ ,  $G = 350$ , exports = 120, imports = 170 (all in billions).

(a) Find net exports.

[1]

(a)

- $X - M = 120 - 170 = -50$  billion

## Exercise 3.3 (b)

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**3.3** An economy has  $C = 700$ ,  $I = 250$ ,  $G = 350$ , exports = 120, imports = 170 (all in billions).

(b) Find GDP.

[2]

## Exercise 3.3 (b)

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**3.3** An economy has  $C = 700$ ,  $I = 250$ ,  $G = 350$ , exports = 120, imports = 170 (all in billions).

(b) Find GDP.

[2]

(b)

- $GDP = 700 + 250 + 350 + (-50) = 1250$  billion