

Program

1. Introduction and preliminaries
2. Flows, stocks, and the production function
3. GDP and National Accounts
4. The basic macroeconomic model
5. Price indexes
6. Money
7. Inflation
8. Unemployment
9. Fiscal and monetary policy
10. International trade and tariffs
11. Exchange rates
12. Growth

Topic 4

The Basic Macro Model

4.1 The Model

4.2 Public Sector

4.3 Private Sector

4.4 Foreign Sector

4.5 Financial Accounts

The Real World is Complex

- *More than 6 billion people*
- *More than 200 countries*
- *Thousands of interrelated economic decisions*
- *It is difficult to identify causes and effects*

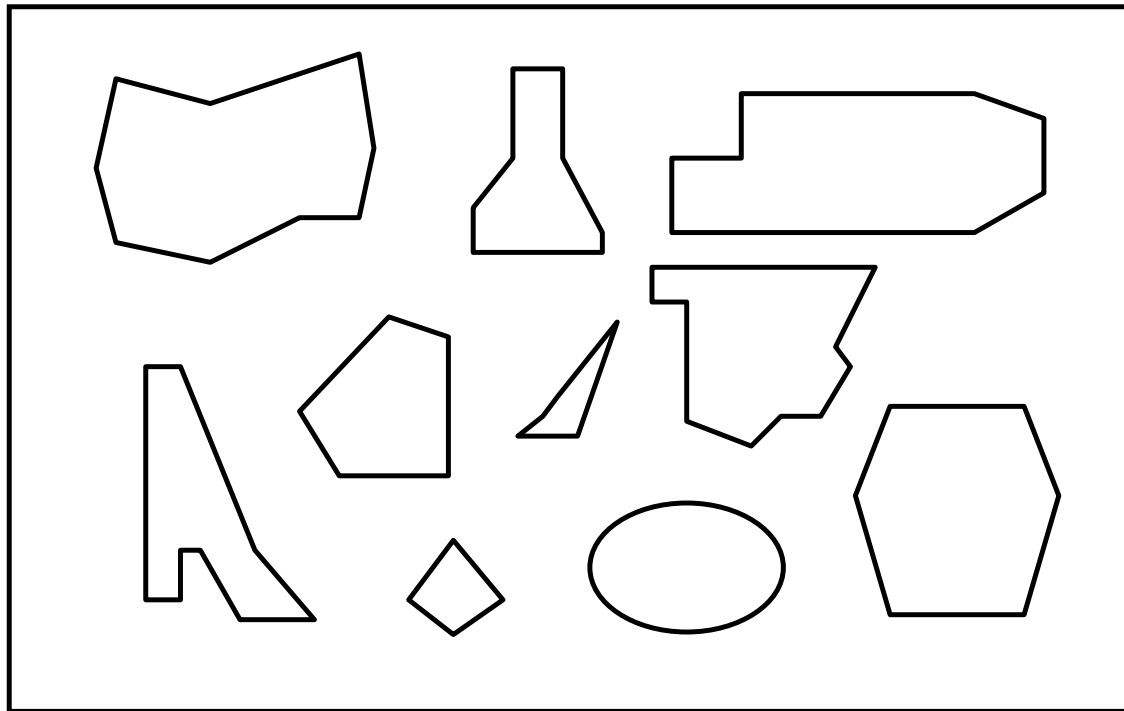
Countries are Complex

- Millions of People*
- Millions of Households*
- Millions of workers*
- Thousands of Companies*

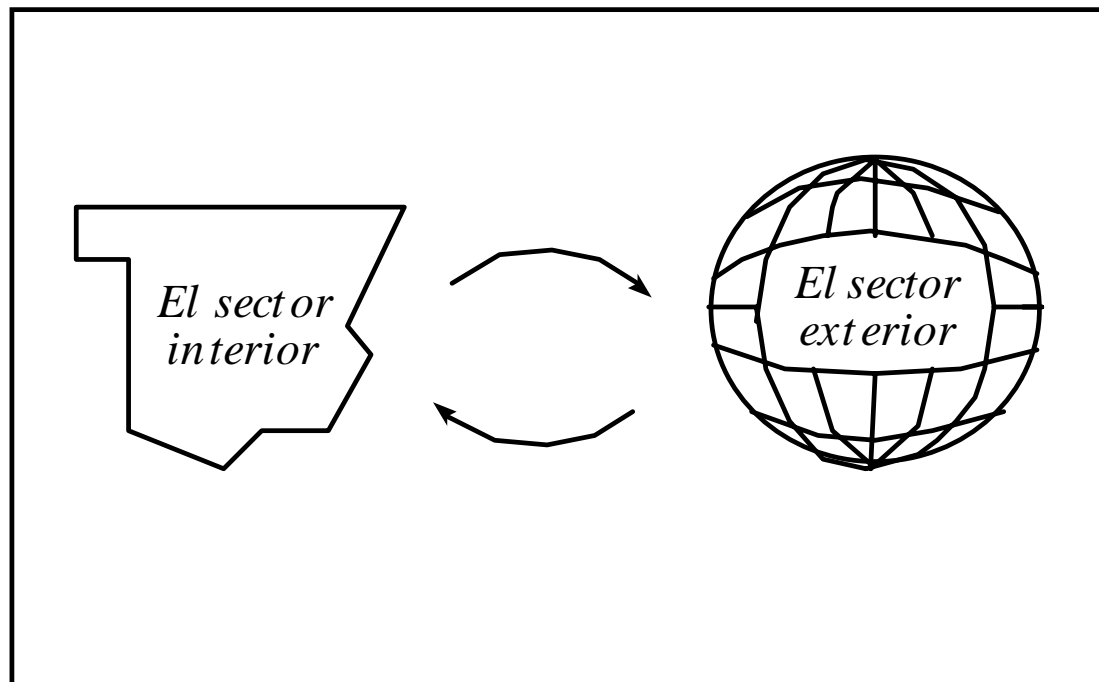
The Basic Model

- *Choose one country: Domestic Sector*
- *The rest of the world: Foreign Sector*
- *Domestic Sector: Private Sector + Public Sector*
- *Private sector: Households and Firms*

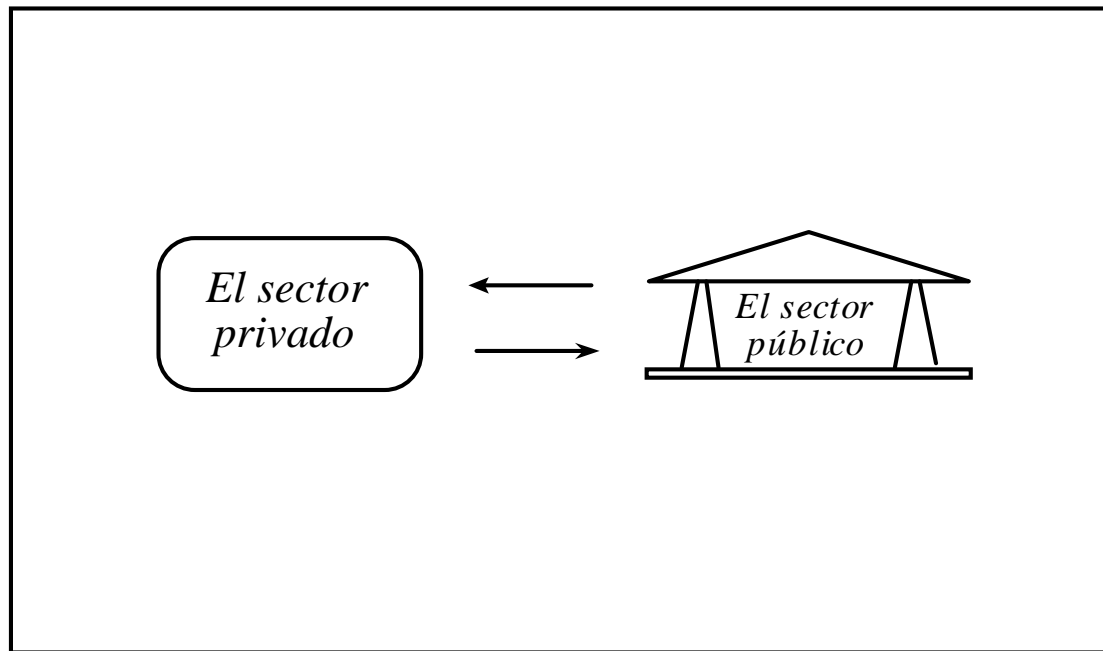
An abstract world with stylized countries



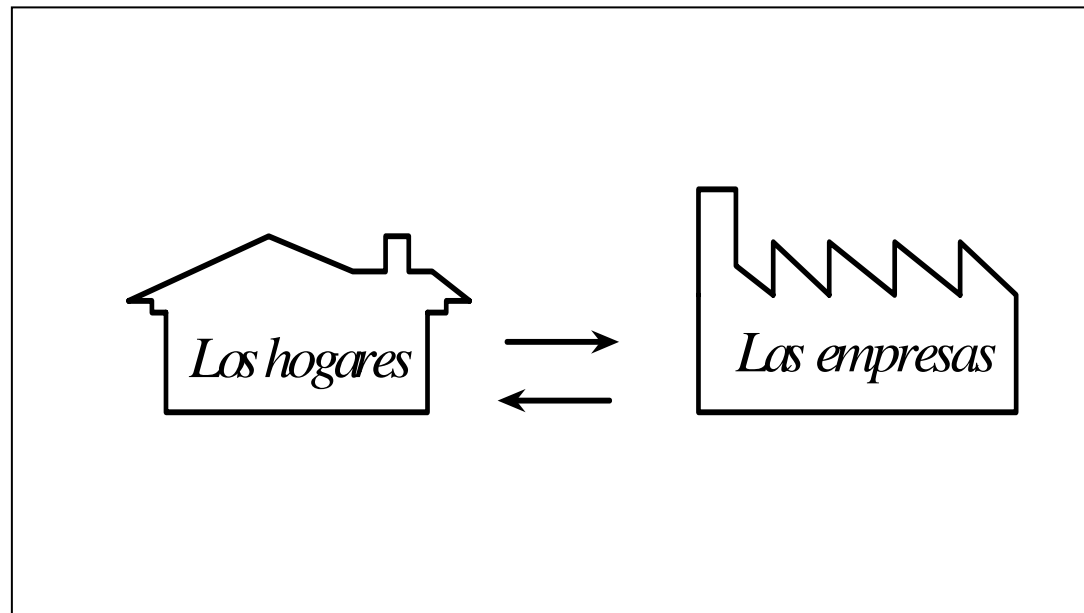
The model



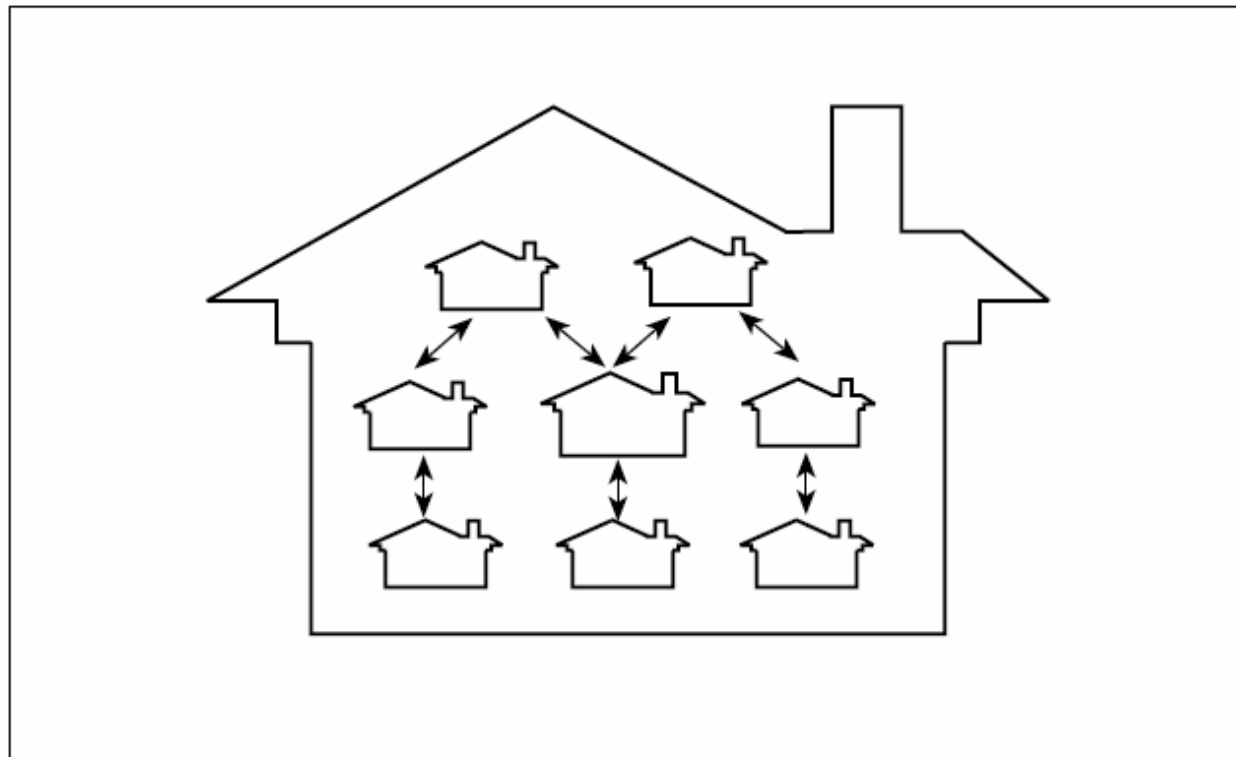
Domestic Country



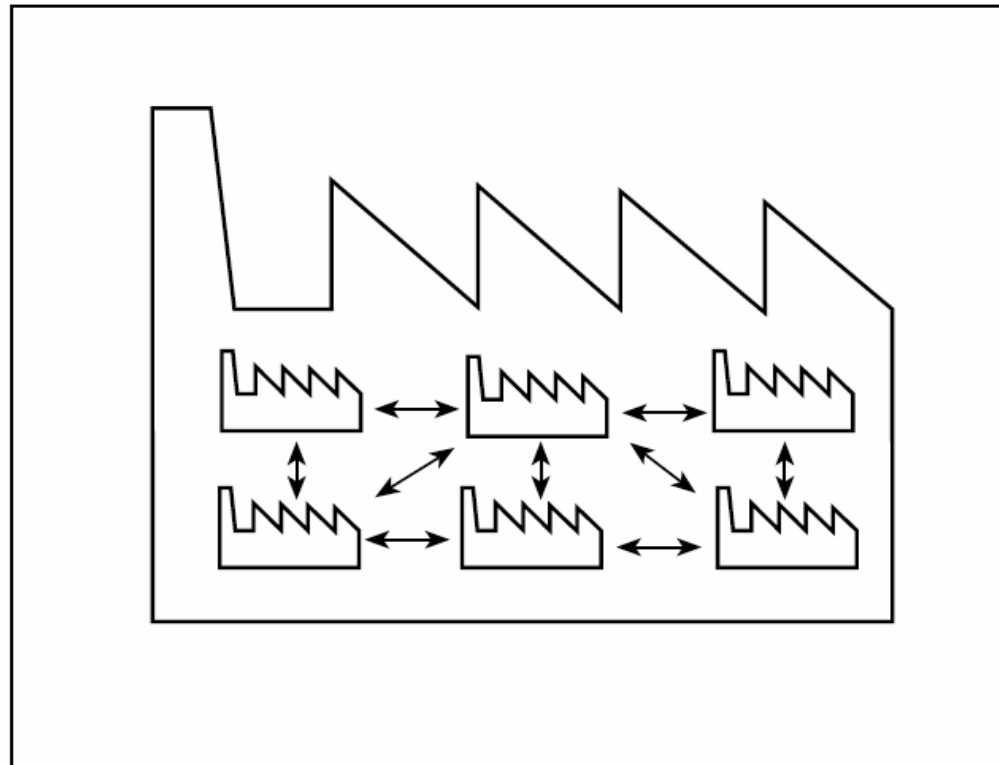
Private Sector



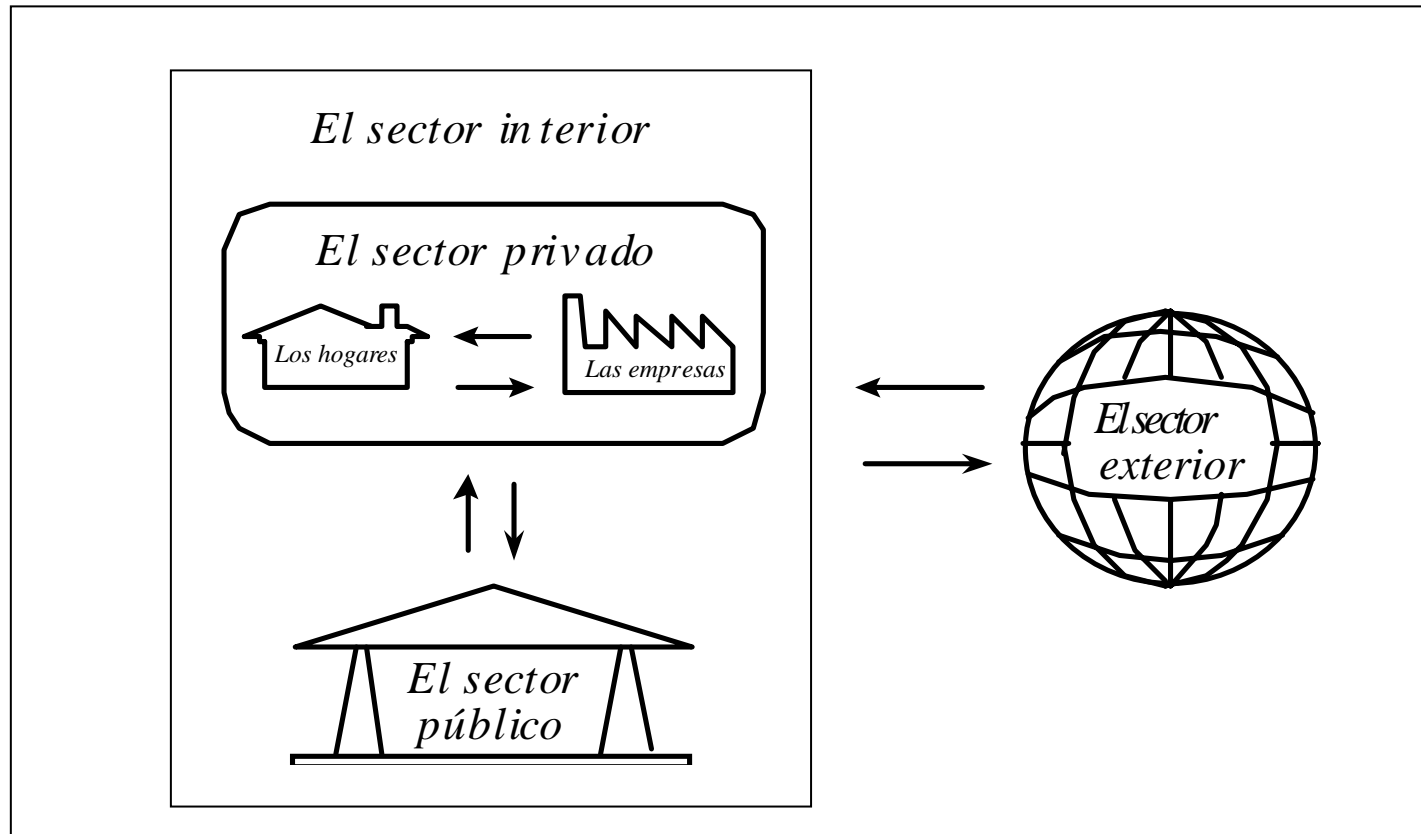
The Representative Household



The Representative Firm



The Basic Macro Model



Advantages and Disadvantages

- Advantages
 - All economic actors are described in a simple and exhaustive way
 - Its simplicity allows to identify cause and effect
- Disadvantages
 - Some economic aspects cannot be captured

The Public Sector (I)

- *All public administrative bodies: central, regional and local governments*
- *As if it were a firm which finances and produces public goods*
- *Resources: Taxes (T)) and Debt (D)*
- *Use: buys consumption and investment goods (G), transfers (t), pays interest on debt (INT)*

Public Sector (II)

The budget constraint

$$G + t + INT = T + D$$

Deficit (DEF)

$$DEF = D = (G + t + INT) - T$$

Public Debt (DP)

$$DP_{t+1} = DP_t + DEF_t$$

Households

- *how much to work (time)*

$$h + \ell = 100$$

- *how much to consume and save (consumption choice)*

$$C + S + T = Y + t + INT$$

- *how to allocate our savings (portfolio choice)*

$$I + M = S$$

Time

$$h + \ell = 100$$

h: work

ℓ: leisure

100 hours per week

Variables influencing the choice: wage (w), wealth, taxes on work, expectations

Consumption

$$C + S + T = Y + t + INT$$

Y: Income (wage, rents, returns on capital)

t: Transfers (pensions, unemployment benefits, etc)

T: Taxes

INT: Interest on government bonds

C: Consumption

S: Savings

*Variables which influence the decision: wealth, expectations,
Taxes on consumption*

Portfolio Choice

$$S = I + M$$

S: Savings

I: Investment (real estate, productive capital...)

M: liquidity necessary for the household

Variables which influence the decision: liquidity, rentability, risk, taxes, etc

Firms

- *Simplified view of the firm*
- *production*
- *Firms acquire inputs, paying the corresponding prices*
- *Firms sell final output to households, public sector and foreign sector*
- *Firms pay taxes and receive subsidies from the public sector*

The Foreign Sector

- *buys goods from domestic firms. These constitute exports (X)*
- *sells goods to domestic households and firms. These constitute imports (Z)*
- *If $X > Z$ the domestic sector has a surplus in the current account*
- *If $X < Z$ the domestic sector has a deficit in the current account*

The use of savings

$$S \equiv Y + t + INT - (C + T) \text{ [savings identity]}$$

$$Y \equiv E \equiv C + I + G + (X - Z) \text{ [expenditure approach]}$$

$$S \equiv [C + I + G + (X - Z)] + t + INT - (C + T)$$

$$S - I \equiv [(G + t + INT) - T] + (X - Z)$$

$$\underline{(S - I) \equiv DEF + (X - Z)}$$

The use of savings in 2002 (%)

País	<i>S-I</i>		<i>DEF</i>		<i>X-IM</i>
ESPAÑA	-2.2	=	0.0	-	2.2
ZEU	2.9	=	2.2	+	0.7
EEUU	-1.7	=	3.1	-	4.8
JAPÓN	10.7	=	7.9	+	2.8

Source: *The Economist*