

Chapter.2 : Thinking like an Economists

المادة الجديدة 2026

مبادئ
الاقتصاد الجزئي

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The Economist as Scientist

هل الاقتصاد علم فعلاً؟ وكيف يطبق الاقتصاديون المنهج العلمي؟

Economists approach their subject with scientific objectivity, similar to how physicists study matter or biologists study life.

They:

- Develop theories
- Collect data
- Analyze data
- Test whether evidence supports or refutes their theories

The essence of science is not laboratories or white coats.
It is the **scientific method**.

لماذا يعتقد البعض أن الاقتصاد ليس علمًا؟

- Do not conduct laboratory experiments like chemists
- Study human behavior, which is complex and unpredictable

However, the core of science is systematic testing and objective analysis, not laboratory equipment.

What Is the Scientific Method in Economics?

The scientific method involves:

1. Observing economic behavior
2. Developing a theory or hypothesis
3. Gathering data
4. Testing the theory
5. Confirming, modifying, or rejecting it

➤ Example:

- **Economists observed that when prices increase, quantity demanded decreases. They formulated the Law of Demand.**
- **They then tested it using market data.**
- If evidence supports it → the theory stands.
If not → it must be revised.



What is the primary role of economists when they study economics as scientists? (MCQ)

- A. They conduct laboratory experiments like biologists and physicists.
- B. They devise theories, collect data, and analyze the data to verify or refute their theories.
- C. They focus only on abstract concepts without using empirical data.
- D. They promote political agendas to influence public policies.

The Scientific Method: Observation, Theory, and More Observation

الفكرة الأساسية في هذا الجزء هي أن المنهج العلمي يقوم على تفاعل مستمر بين: الملاحظة و تطوير نظرية و اختبارها بملاحظات جديدة.

Case #1: Isaac Newton

قصة Isaac Newton، العالم في القرن السابع عشر.

Isaac Newton *observed an apple falling from a tree.*

He asked why the apple always fell straight down to the earth.

From this observation, *he developed the theory of gravity*, which applies not only to a falling apple but to any two objects in the universe.

Subsequent testing showed that the theory works well in many circumstances (though not all, as later shown by Albert Einstein).

Because Newton's *theory successfully explains what we observe*, it is still taught in physics courses.

This clearly demonstrates:

Observation → Theory → Testing → Validation

Case #2 Economics

A similar interplay between theory and observation occurs in economics.

Observation:

Rapidly increasing prices in a country.

Theory:

High inflation arises when the government issues too much money.

Testing:

The economist collects and analyzes data on prices and money from many different countries.

If growth in the quantity of money is unrelated to the rate of price increase, the economist doubts the *validity of the theory*.

If money growth and inflation are correlated, the economist becomes more confident in the proposed theory.

The Challenge: Conducting Experiments Is Often Impractical

- Unlike physicists, economists cannot manipulate a nation's monetary policy just to test a theory.
- Therefore, economists, like astronomers and evolutionary biologists, make do with whatever data the world gives them.

Natural Experiments

To substitute for laboratory experiments, economists rely on natural experiments offered by history.

Example:

A war in the Middle East interrupts the supply of crude oil → oil prices skyrocket → cost of living increases.

For economic scientists, such an event provides an opportunity to study the effects of a key natural resource on the world's economies.

Studying historical episodes:

- yields insights into the economy of the past
- helps illustrate and evaluate economic theories of the present

The Role of Assumptions

الفكرة الأساسية في هذا الجزء هي أن الافتراضات (Assumptions) تُستخدم لتبسيط الواقع المعقد، دون أن تؤثر بشكل جوهري على فهمنا للظاهرة المدروسة.

❖ Why Economists Make Assumptions

Economists make assumptions for the same reason: to simplify the complex world and make it easier to understand.

For example, when studying international trade, we may assume:

- The world consists of only two countries.
- Each country produces only two goods.

This is not an accurate representation of reality.

However, this simplified imaginary world allows us to focus on the essence of the problem.

After analyzing trade in this simplified framework, we are better prepared to understand trade in the real, more complex world.

- ***economists use different assumptions for different questions.***

If we study the effects of a change in the quantity of money, an important issue is how prices respond.

Many prices change infrequently.

➤ For short-run analysis:

- We may assume prices do not change much.
- We may even assume prices are completely fixed.

➤ For long-run analysis:

- We assume prices are completely flexible.



Why is it difficult for economists to perform experiments? (MCQ)

- A. Because controlled laboratory experiments are often impossible in economics.
- B. Because economists do not use the scientific method.
- C. Because economics does not require data.
- D. Because economists rely only on hypothetical data.



What is the purpose of making assumptions in economic models? (MCQ)

- A. To exactly capture all features of the real world.
- B. To simplify complex problems and focus on the essence of the problem.
- C. To intentionally mislead the analysis.
- D. To replace data when unavailable.

Economic Models

الفكرة الأساسية في هذا الجزء هي أن النماذج (Models) تُستخدم لتبسيط الواقع من أجل تحسين فهمنا له، وليس لنسخه كما هو. الاقتصاديون أيضًا يستخدمون **models** لفهم العالم.

نماذجهم تتكون غالبًا من:

- diagrams (رسوم بيانية)
- equations (معادلات)

Note

- Models are built with assumptions.
- All models simplify reality to improve our understanding.

All models are subject to revision when the facts warrant it, If new evidence contradicts the model, it must be modified.

As George Box said:

“All models are wrong, but some are useful.”

This means:

No model perfectly represents reality.

But a good model is useful for understanding and analysis.



What is the purpose of making assumptions in economic models? (MCQ)

- A. To exactly capture all features of the real world.
- B. To simplify complex problems and focus on the essence of the problem.
- C. To intentionally mislead the analysis.
- D. To replace data when unavailable.



Which best describes an economic model? (MCQ)

- A. A collection of unrelated facts and statistics.
- B. A simplification of reality that helps understand important economic relationships.
- C. A fully detailed replication of the economy.
- D. A theoretical abstraction without practical value.

Our First Model: The Circular-Flow Diagram

Circular-flow diagram: a visual model of the economy that shows how dollars flow through markets among households and firms.

الاقتصاد يتكوّن من ملايين الأشخاص الذين يشاركون في أنشطة متعددة مثل:

- الشراء (buying)
- البيع (selling)
- العمل (working)
- التوظيف (hiring)
- التصنيع (manufacturing)

ولكي نفهم كيف يعمل الاقتصاد، لا يمكننا دراسة كل هذه الأنشطة بتفاصيلها الكاملة، لذلك نحتاج إلى تبسيط التفكير. بمعنى آخر، نحتاج إلى نموذج (model) يوضح:

- كيف يتم تنظيم الاقتصاد
- وكيف يتفاعل المشاركون فيه مع بعضهم البعض

The Two Decision Makers

The circular-flow diagram simplifies the economy into two types of decision makers:

- Firms.
- Households.

Firms:

- Produce goods and services
- Use inputs such as:
 - Labor land capital.
 - These inputs are called factors of production.

Households:

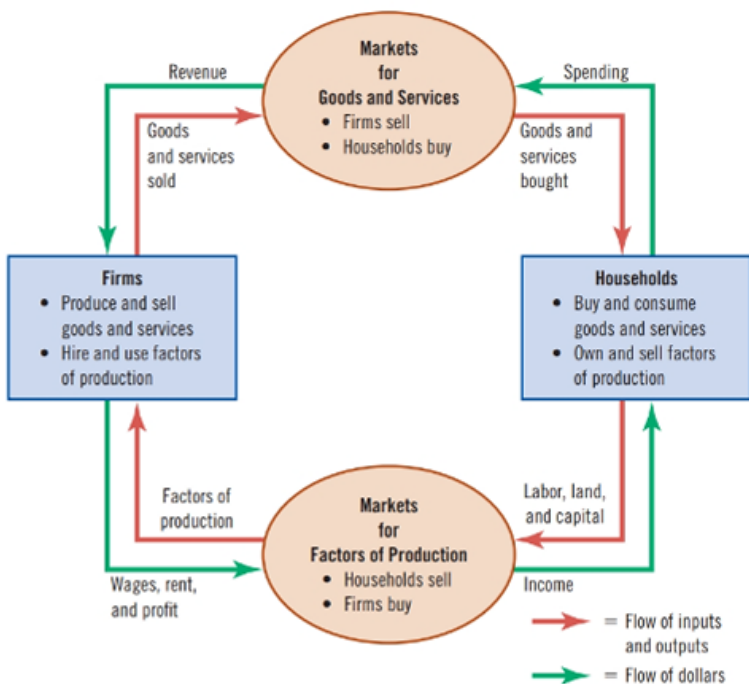
- Own the factors of production.
- Consume all the goods and services that firms produce.

❖ The Two Markets**Households and firms interact in two types of markets:****Markets for Goods and Services**

- Households are buyers.
- Firms are sellers.
- Households buy the output produced by firms.

Markets for the Factors of Production

- Households are sellers.
- Firms are buyers.
- Households provide labor, land, and capital.
- Firms use these inputs to produce goods and services.



To understand the circular-flow diagram, the text suggests following a single dollar bill as it moves through the economy.

Step 1: The Dollar Starts with a Household

Imagine the dollar begins in your wallet.
You represent a household.

If you want a cup of coffee, you take the dollar to the market for goods and services.

When you buy coffee at a coffee shop:

- The dollar moves into the shop's cash register.
- It becomes revenue for the firm.

Step 2: The Dollar Moves to Factor Markets

The firm does not keep the dollar.

It spends the dollar on inputs in the markets for the factors of production.

For example, the coffee shop may:

- Pay rent to the landlord.
- Pay wages to the baristas.
- Return the dollar as profit to the owner.

In each case, the dollar becomes income for some household.

Because:

- Workers are members of households.
- Landlords are members of households.
- Firm owners are members of households.

The dollar ends up back in someone's wallet.

Step 3: The Cycle Repeats

Once the dollar is in another household's wallet, the circular flow starts again.

The dollar continuously moves between:

- Households
- Firms
- Goods and services markets
- Factor markets

Simplified Model

The circular-flow diagram presented is a simple model.

A more complex version would include:

- Government
- International trade

Our Second Model: The Production Possibilities Frontier

a graph that shows the combinations of output that the economy can possibly produce with the available factors of production and production technology.

The **Production Possibilities Frontier (PPF)** is a graph that shows all the possible combinations of two goods an economy can produce given:

- Limited resources (labor, land, capital)
- Existing technology

It illustrates the fundamental economic problem: **scarcity**.

Example: Cars and Computers

Assume an economy produces only:

- Cars
- Computers

All resources in the economy are divided between these two industries.

Extreme Points

- If all resources go to cars → 1,000 cars and 0 computers
- If all resources go to computers → 3,000 computers and 0 cars

These are the two endpoints of the PPF.

Efficient Points (On the Curve)

Suppose:

- Point A: 600 cars and 2,200 computers
- Point B: 700 cars and 2,000 computers

Both points are **efficient** because the economy is fully utilizing its resources.

Notice what happens when we move from A to B:

- Cars increase by 100
- Computers decrease by 200

This sacrifice represents the **opportunity cost**.

Opportunity Cost | Example

To produce 100 additional cars, the economy must give up 200 computers.

This trade-off is the key idea behind the PPF.

Inefficient Points (Inside the Curve)

Suppose the economy produces:

- 400 cars and 1,500 computers

This point lies inside the PPF.

It is attainable but inefficient because resources are underutilized (for example, unemployment or idle factories).

Unattainable Points (Outside the Curve)

Suppose the economy wants to produce:

- 1,000 cars and 3,000 computers

This point lies outside the PPF.

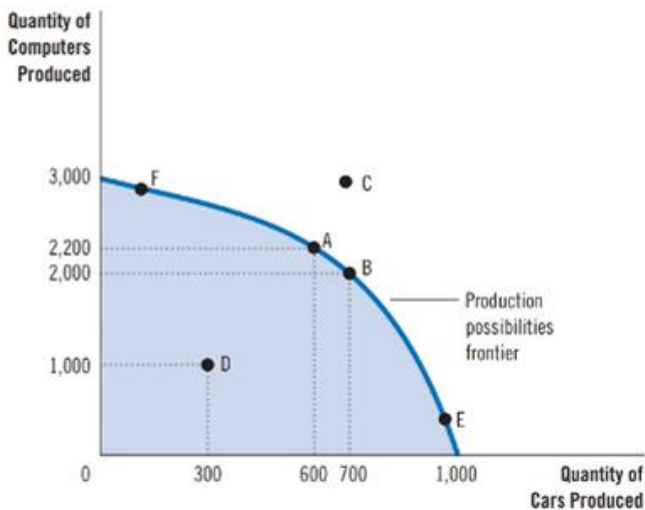
It is currently impossible given existing resources and technology.

What Happens with Economic Growth?

If technology improves (for example, better computer production technology):

- The PPF shifts outward.
- The economy can produce more of both goods.

This represents **economic growth**.



- Any point on or beneath the curve is a **possible** output combination in this economy.
- Points outside the frontier are **not feasible** given the economy's resources.
- The slope of the production possibilities frontier measures the opportunity cost of a car in terms of computers.
- This opportunity cost varies, depending on how much of the two goods the economy is producing.

An outcome is **efficient** if the economy is getting the maximum possible output from its scarce resources.

- Points **on** the PPF → Efficient
- Points **inside** the PPF → Inefficient
- Points **outside** the PPF → Unattainable

Example

At **Point A**:

- 600 cars
- 2,200 computers

The economy is fully using its labor, capital, and land.

If we try to produce more cars → we must reduce computers.

There is no “free lunch.”

By contrast, **point D** represents an inefficient outcome.

At point D:

- The economy is producing only 300 cars and 1,000 computers.
- For some reason—perhaps widespread unemployment—it is producing less than it could from the resources it has available.

If the source of inefficiency is eliminated, the economy can increase its production of both goods.

For example:

When the economy moves from **point D to point A**:

- Cars increase from 300 to 600.
- Computers increase from 1,000 to 2,200.

Opportunity Cost

Another principle states:

The cost of something is what you give up to get it.

This is called **opportunity cost**.

The production possibilities frontier shows the opportunity cost of one good as measured in terms of the other.

When society moves from **point A to point B**:

- It gives up 200 computers to get 100 additional cars.
- The opportunity cost of 100 cars is 200 computers.
- The opportunity cost of one car is two computers.

Important:

The opportunity cost of a car equals the slope of the production possibilities frontier.

Why the Production Possibilities Frontier Is Bowed Outward

The opportunity cost of a car in terms of computers is not constant.

It depends on how many cars and computers the economy is producing.

Because the production possibilities frontier is **bowed outward**, the opportunity cost of a car is:

- Highest when the economy is producing many cars and few computers (such as at point E).
- Lowest when the economy is producing few cars and many computers (such as at point F).

At **point F**:

- The frontier is relatively flat.
- The opportunity cost of a car is small.

At **point E**:

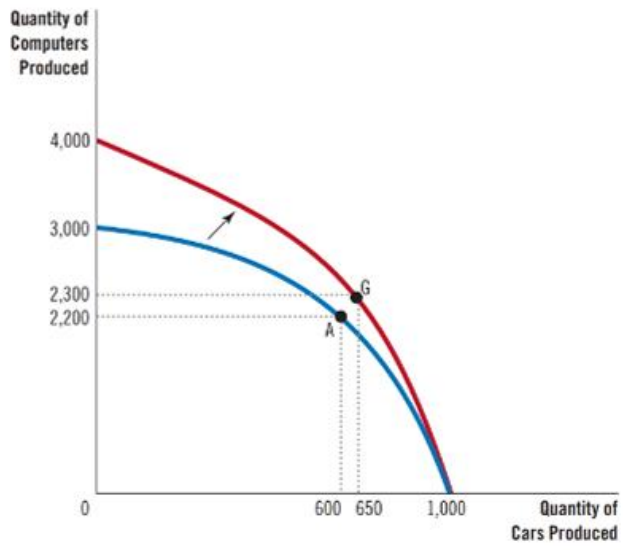
- The frontier is steep.
- The opportunity cost of a car is high.

This occurs because resources are not perfectly adaptable.

When most resources are producing computers, the resources best suited to car production are being used in the computer industry. Increasing car production causes only a slight reduction in computer output.

When most resources are producing cars, producing an additional car requires moving some of the best computer technicians out of the computer industry. As a result, computer output falls substantially.

Economic Growth and the Shift of the Frontier



As a result, the **production possibilities frontier (PPF) shifts outward**.

For any given number of cars, the economy can now produce more computers.

If the economy moves from **point A to point G**, it produces more cars and more computers.

This outward shift of the PPF represents **economic growth**.

- Moving along the same PPF = trade-off.
- Shifting the PPF outward = growth.

➤ Technological Advance and the PPF

Suppose a **technological advance in the computer industry** occurs.

This means:

- Each worker can now produce more computers per week.
- The same amount of labor, capital, and land produces a greater quantity of computers.

Productivity in the computer industry increases.



An economic model is (MCQ)

- a mechanical machine that replicates the functioning of the economy.
- a fully detailed, realistic description of the economy.
- a simplified representation of some aspect of the economy.
- a computer program that predicts the future of the economy.



The circular – flow diagram illustrates that, in markets for the factors of production , (MCQ)

- households are sellers, and firms are buyers.
- households are buyers, and firms are sellers.
- households and firms are both buyers.
- households and firms are both sellers.



A point inside the production possibilities frontier is (MCQ)

- A. efficient but not feasible.
- B. feasible but not efficient.
- C. both efficient and feasible.
- D. neither efficient nor feasible.

Microeconomics and Macroeconomics

Economics is also studied on **various levels**:

- **Individual level** – examining the decisions of **households** and **firms**.
- **Market level** – focusing on how **households and firms interact in markets** for specific goods and services.
- **Aggregate level / Economy as a whole** – studying the operation of the **economy as a whole**, encompassing all activities in all markets.

Economics is traditionally divided into two broad subfields:

1. **Microeconomics:**

- The study of **how households and firms make decisions** and how they interact in **specific markets**.
- Examples:
 - The effects of **rent control** on housing in New York City.
 - The impact of **foreign competition** on the U.S. auto industry.
 - The effects of **education** on workers' earnings.

2. **Macroeconomics:**

- The study of the **overall economy**.
- Examples:
 - The effects of **federal government borrowing**.
 - Changes in the **unemployment rate** over time.
 - Alternative policies to promote **growth in national living standards**.



All of the following topics fall within the study of microeconomics EXCEPT (MCQ)

- A. The impact of cigarette taxes on the smoking behavior of teenagers.
- B. The role of Microsoft's market power in the pricing of software .
- C. the effectiveness of antipoverty programs in reducing homelessness.
- D. the an influence of the government's budget deficit on economic growth.

- Changes in the overall economy arise from decisions of **millions of individuals**.
- Therefore, it is **impossible to understand macroeconomic developments without considering the underlying microeconomic decisions**.

The Economist as Policy Adviser

الاقتصاديين غالبًا يُطلب منهم شرح أسباب الأحداث الاقتصادية.

Why is **unemployment higher for teenagers than for older workers**?

This is a **factual question**.

A factual question can be answered **scientifically** using:

- Data
- Economic analysis
- Research

For example, economists might explain teenage unemployment by:

- Lack of experience
- Lower skills
- Minimum wage laws
- Employer preferences

In this case, economists are **explaining reality**.

لماذا معدل البطالة أعلى لدى المراهقين مقارنة بالعمال الأكبر سنًا؟

هذا يسمى سؤالاً واقعيًا (Factual Question).

هذا النوع من الأسئلة يمكن الإجابة عنه بشكل علمي من خلال:

- جمع البيانات
- تحليل السوق
- دراسة سلوك العمال وأصحاب العمل

قد يفسر الاقتصاديون ارتفاع البطالة بين المراهقين بسبب:

- قلة الخبرة
- انخفاض المهارات
- قوانين الحد الأدنى للأجور
- تفضيل الشركات للعمال ذوي الخبرة

كل هذا يسمى تفسير اقتصادي للواقع.

➤ Recommending Economic Policies

Sometimes economists are asked not only to explain events but also to **recommend policies to improve economic outcomes**.

Example:

أحيانًا لا يُطلب من الاقتصاديين فقط تفسير ما يحدث، بل يُطلب منهم اقتراح سياسات لتحسين النتائج الاقتصادية.

What should the **government do to enhance teenagers' well-being**?

مثال في النص:

Answering this question requires:

ماذا يجب أن تفعل الحكومة لتحسين رفاهية المراهقين؟

1. Understanding what is happening
2. Making **value judgments**

هنا المشكلة ليست فقط فهم الواقع، بل اتخاذ قرار حول:

Value judgments involve deciding **what ought to be done** based on social values and goals. ما الذي يجب فعله؟

❖ Two Roles of Economists

The text explains that economists have **two roles**.

Economists as Scientists

When economists **explain the world**, they act as **scientists**.

They:

- Analyze data
 - Study economic behavior
 - Explain causes of economic events
-

Economists as Policy Advisers

When economists **give guidance on how to improve the economy**, they act as **policy advisers**.

They:

- Recommend policies
 - Suggest economic solutions
 - Help governments make decisions
-

▪ Positive vs. Normative Analysis

Economists use two types of analysis:

1. **Positive analysis**

2. **Normative analysis**

The difference is related to **how economists use language and their goals**.

- Scientists use **positive statements**.
- Policy advisers use **normative statements**.

- The example discusses **minimum-wage laws**.

Two people are speaking:

Rasha:

Statement: Minimum-wage laws cause unemployment.

This is a **positive statement**.

Because it **describes how the world works**.

It can be tested using:

- Data
- Economic analysis
- Evidence

Noha

Statement: The government should raise the minimum wage.

This is a **normative statement**.

Because it expresses **what ought to happen**.

Positive Statements

Positive statements are **descriptive**.

They describe **how the world is**.

Characteristics:

- Based on facts
- Testable using evidence
- Can be confirmed or refuted

Examples:

- Higher prices reduce demand.
- Taxes affect consumption.
- Minimum wage may increase unemployment.

Normative Statements

Normative statements are **prescriptive**.

They describe **how the world ought to be**.

Characteristics:

- Based on values
- Involve ethical or political judgments
- Cannot be tested with data alone

Examples:

- The government should increase minimum wages.
- Taxes should be reduced.
- The government should support poor households.

positive statements: claims that attempt to describe the world as it is

normative statements: claims that attempt to prescribe how the world should be



Which of the following is a positive, rather than a normative, statement?(MCQ)

- A. Law X will reduce national income. B. Law X is a good piece of legislation.
C. Congress ought to pass law X. D. The president should veto law X.

❖ Why Economists Disagree

• Economists often give conflicting policy

advice:

- May disagree about the validity of alternative positive theories about the world
- May have different values and, therefore, different normative views about what policy should try to accomplish

Yet, there are many propositions about which most economists agree.

- *A ceiling on rents reduces the quantity and quality of housing available. (93%)*
- *Tariffs and import quotas usually reduce general economic welfare. (93%)*
- *The United States should not restrict employers from outsourcing work to foreign countries. (90%)*
- *The United States should eliminate agricultural subsidies. (85%)*
- *Local and state governments should eliminate subsidies to professional sports franchises. (85%)*
- *Cash payments increase the welfare of recipients to a greater degree than do transfers in-kind of equal cash value. (84%)*
- *A large federal budget deficit has an adverse effect on the economy. (83%)*
- *The United States should not ban genetically modified crops. (82%)*
- *A minimum wage increases unemployment among young and unskilled workers. (79%)*