

LESSON 1: BASIC IDEAS

1.1 The characteristic elements of an economic problem

A widely used definition characterizes economics as the study of the use of scarce resources for the achievement of alternative ends.

A definition of a scientific discipline is always an imperfect way of capturing the many dimensions that such discipline usually has, but this particular definition encloses some elements which are essential in what distinguishes economic from other types of problems.

Scarce resources: In order to have an economic problem, resources have to be limited. If their availability is unlimited, then no matter how we allocate them, we will always achieve whatever ends have been established.

A plurality of ends: If there was only one end, we would have an engineering rather than an economic problem. The issue then would be how to combine in the technically most efficient way these resources in order to achieve this end. To have an economic problem we need a plurality of ends.

Alternative ends: To have an economic problem, ends have to be not only plural, but also competing. If there are two ends, but the achievement of one does not affect the achievement of the other, then instead of having one, we have two engineering problems instead of one, but we still do not have an economic problem. An economic problem arises when the satisfaction of one end means the non-satisfaction of another. The fact that many resources can be applied indistinctively to the satisfaction of a plurality of ends (that is, that resources are transferable between ends) and that these resources are scarce, means that when there is a plurality of ends, most likely these ends will be competing between each other.

1.2 Optimization and equilibrium

The main characteristic that distinguishes microeconomics from macroeconomics is that the basic units of analysis in microeconomics are individual economic agents or individual decision takers, who are usually identified as consumers or firms.

A consumer is an economic agent who has income (which he derives from the sale of the factors of production that he owns) and who has to choose a given set of goods to consume.

A firm is also an individual decision-taker, whose problem is to combine factors to produce goods that will be sold to consumers.

These are theoretical concepts. The real counterpart of these concepts are much more complex. The simplification of reality is an important feature of the scientific method. Unless there is a certain extent of simplification, it is very difficult to analyse reality. A good theory, however, is one that manages to capture in its simplified concepts the essential elements of the real counterparts.

How do consumers and firms behave in order to achieve their ends? We assume they are rational, in a particular sense that we define below. The rationality assumed of consumers and firms is a hypothesis of the theory that it may be fulfilled or not by reality. If it is a bad hypothesis, the predictions of microeconomics will be falsified by reality (the empirical observations of this reality will refute the predictions of the theory); if it is a good hypothesis, the empirical data will not be inconsistent with these predictions (empirical data will not be able to refute these predictions).

We find that the hypothesis of rationality may be a bad hypothesis in particular cases, but that on average is a good description of reality.

What do we mean when we say that an economic agent is rational?

An economic agent is rational when:

- a) The agent is able to set out all available and feasible alternatives. If the agent is a consumer, all the alternative baskets of goods that he can afford; if the agent is a firm, all the alternative ways of combining inputs to produce a given output.
- b) The agent is capable of ranking these alternatives in order of preference. A consumer can rank the satisfaction (the utility) it derives from different baskets of goods. A firm can identify the consequences on benefits of the different combinations of inputs.
- c) The agent is capable of choosing the feasible alternative which ranks the highest in this ordering. He is capable, within the limits set by his income, of maximizing utility if the agent is a consumer; and, within the limits imposed by technology, of maximizing profit if it is a firm.

The way rationality is defined means that the behaviour of agents can be adequately represented as an optimization problem: the agent is assumed to seek the best alternative out of all the feasible alternatives opened to him. The result of this

problem is an optimal choice. Since we know on what parameters (prices, incomes, salaries, rates of interest, etc.) these optimal choices depend, then we are able to make predictions as to how these choices will change when these parameters change. Examples of these types of predictions are the demand curve for consumer theory and the supply curve for production theory.

An optimal choice is a situation in which agents are satisfied with the alternative they have taken. There are no forces working to alter that choice. We say then that the agent is in a situation of equilibrium. The concept of equilibrium is more general. It applies not only to individual agents but also to aggregate relationships.

1.3 Demand, Supply and Market Equilibrium

The aggregation of the individual behaviour of consumers gives rise to the demand function. The demand function is usually defined for specific goods (the demand for cars). The aggregation of the individual behaviour of firms gives rise to the supply function, which is also usually defined with respect to particular goods (the supply of cars).

The interaction of demand and supply, and the transactions that this interaction generates, take

place in the context of a market. A market in this theoretical sense is a concept which has no substance. In reality, a market is a social institution which provides a set of rules that enable demanders and suppliers to meet, to provide and share information and to exchange goods. In the car market consumers exchange money for cars. The rules ensure that money is accepted and that the right of property over the car is transferred from the seller to the buyer.

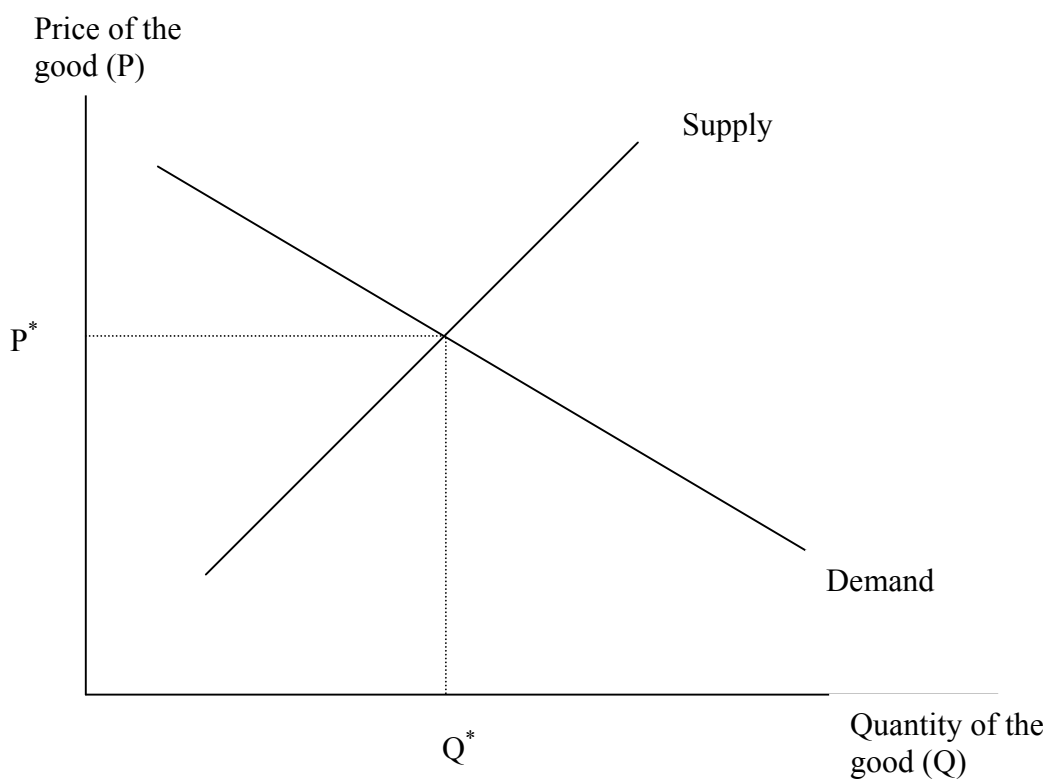
The demand function shows the behaviour of consumers. For any given price of the good, it says what will be the quantity of this good that will be purchased by consumers. Along this relationship consumers are in equilibrium; they have no desired to move.

The supply function shows the behaviour of producers. For any given price of the good, it says what will be the quantity of this good that will be produced and put for sale by producers. Also, along this relationship producers are in equilibrium; they have no desire to move.

The market is in equilibrium when demand is equal to supply. At that point, the price of the good is such, that the quantity consumers want to purchase equals the quantity producers put in the market. Since both consumers and producers are on their

respective behavioural relationship (consumers on the demand curve and producers on the supply curve), there are no forces working to alter this situation.

So, market equilibrium has to fulfil the following two conditions: a) all agents are satisfied because they are able to exercise their optimal choices given the outside parameters they face (they are on their behavioural relationship); and b) the behaviour of demanders is consistent with the behaviour of suppliers (at the equilibrium price, demand equals supply).



1.4 Practical applications

The demand – supply model, despite its apparent simplicity, is a powerful tool of analysis. Used with care and skill, it can help significantly to understand the way real markets function.

Consider the markets of butter and margarine that are discussed in Problem 2 of Lesson 1 in the Set of Problems.

What are the variables on which the market demand for butter will depend? What is the qualitative direction of this dependency?

- Price of butter (-)
- Price of any close substitute (margarine) (+)
- Income (+)
- Consumers' preferences

What about the market supply of butter?

- Price of butter (+)
- Wages (-)
- Cost of capital (-)
- Butter technology

In a sense, the model of supply and demand is a classification scheme. The key is that there are some variables that enter into the demand function, but not

in the supply function. This enables us to identify these functions and to see how they will move when these variables change.

To help in the treatment of several variables, recall from last year the concept of ceteris paribus. In graphical representations of the supply and demand curves we relate the quantity of the good sold and bought with its price. All the other variables are held constant along these curves: they are in the ceteris paribus clause of these curves. Any change in these variables will shift the corresponding curve.

Another interesting feature is the existence of related markets. In this case, the market of margarine. Margarine is a close substitute of butter. Therefore it is to be expected that changes in one market have repercussions in the other.

Variables that enter into the market demand function for margarine:

- Price of margarine (-)
- Price of butter (+)
- Consumers' tastes

Variables that enter into the market supply function of margarine:

- Price of margarine (+)

- Wages (-)
- Cost of capital (-)
- Margarine technology

Both markets will be simultaneously in equilibrium when in both markets demand equals supply.

According to the explanation given above, in the demand curve for butter, the ceteris paribus clause includes: price of margarine, income and consumers' preferences.

In the supply curve of butter: wages, cost of capital, butter technology.

In the demand curve for margarine: price of butter, income and consumers' preferences.

Finally, in the supply curve of margarine: wages, cost of capital and margarine technology.

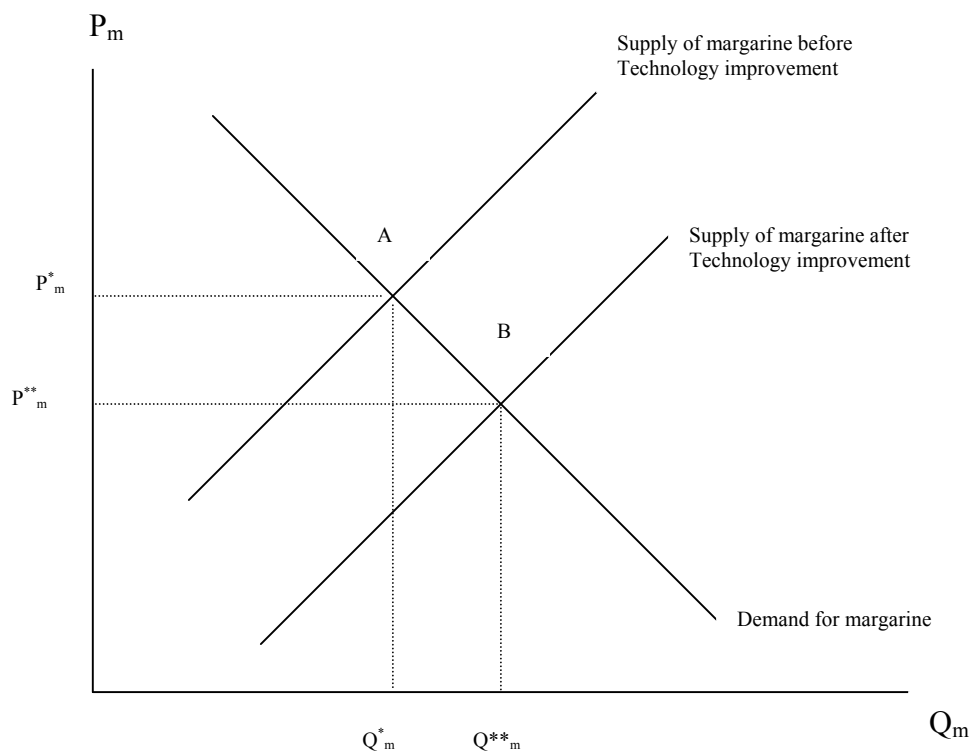
Suppose there is an improvement in the technology used to produce margarine. How will these two markets be affected?

If margarine can be produced more efficiently, the supply of margarine will shift to the right (at any price, more margarine will be put in the market). On the other hand, since technology does not enter into the demand for margarine, the demand curve will

stay put. Because of this, we are able to predict that this improvement in technology will lower the price of margarine and increase the quantity of margarine transacted in this market.

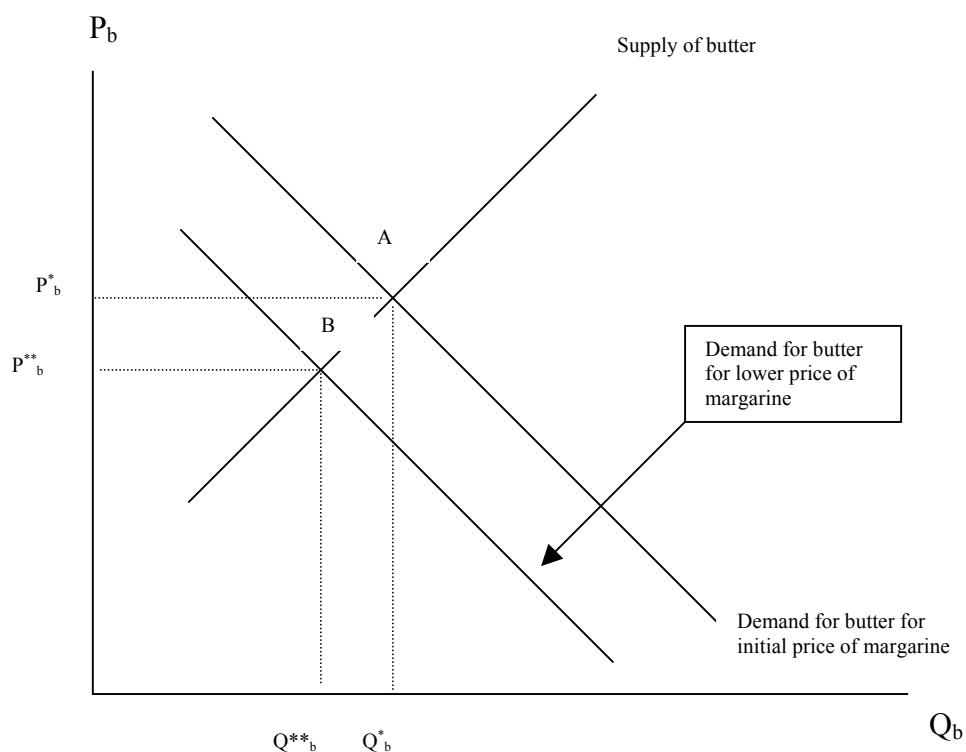
Notice that if the demand curve had also moved, then the prediction obtained above would not have been possible. This is why the classification scheme of variables between demand and supply is so important, as it is that some variables enter in one function but not in the other.

Market of margarine



But is this the end of the effects of this improvement in the margarine technology? The answer is no. Recall that the price of margarine is in the ceteris paribus of the demand for butter; and since they are substitute goods, a lower price of margarine means a reduction in the demand for butter. Therefore the demand curve for butter will shift to the left, while the supply curve of butter will remain in its original place. Thus, both the price and quantity of butter will be reduced.

Market of butter



Exercise: Suppose that because of the entry of a group of vegetarian tourists during the summer there

is an increase in the consumers' preferences for margarine. What effects will this have on the markets of butter and margarine.