Chapter 3. Economics and Politics

I. Introduction

The economist addresses the legislator first, in order to indicate what is possible and desirable. The economist also addresses everyone, as citizens and as economic agents, and provides a framework for forming judgments about the legitimacy of social organization and individual actions.

Framework of a market economy: the economist draws on theoretical knowledge to advise the legislator. This dimension has been present from the outset, for example with the promotion of free trade. Classical and neo-classical theories are associated with economic liberalism, that is: with the promotion of market economies and with advocacy in favor of economic liberalism.

Economic liberalism can be understood in 3 ways.

(i) First, it sets out *principles of economic policy* according to which the State should avoid intervening in the economy, should leave the greatest possible place to the market, should promote free trade by following the watchword inaugurated by physiocracy: "laissez passer, laissez faire," and should let prices vary according to the gaps between overall supply and demand, without setting a price ceiling or floor.

(ii) According to a second meaning, society must be understood on the basis of the individuals who make it up, and each person must be free to define and pursue their personal interest. This is an *ethical liberalism* which holds that a society should not be founded on a prior conception of the good life.

(iii) A final meaning of the term rests on the idea that the *free variation of prices* is sufficient to bring about a social order, understood in economic terms as an *equilibrium* that implies the *optimal* use of limited resources.

The soundness of the economic policy injunctions *(i)*, as well as the legitimation of everyone's pursuit of their own interest *(ii)*, depend on the idea that separate individuals, driven by their own interest and making decisions on the basis of prices, manage to form a coherent society *(iii)*. Hence the importance, in all economic thought, of the theory of coordination through prices.

II. GET and Economic Liberalism

Within the framework of a market economy: the economist draws on theoretical knowledge to advise the legislator. This dimension has been present from the outset with the promotion of free trade.

- *Physiocracy*. In order to ensure subsistence, it is necessary to encourage large-scale production, to prefer more productive techniques (plowing with horses rather than oxen), to develop agriculture, and to promote free trade and the free determination of prices.
- *Classical economists*. Promote trade, both domestic and international. Distrust of monopolies that refuse the import of foreign products (Smith hostile to import barriers, Ricardo in favor of abolishing the Corn Laws): do not hinder free trade, which lowers the price of food goods.
- *Neo-classical economists*. The Pareto optimality of competitive equilibrium (or the maximization of overall surplus in partial equilibrium) is interpreted as an argument in favor of competition.

The rest of the course builds on general equilibrium theory, which underlies most work in micro- and macroeconomics.

1. The desirability of equilibrium: Pareto optimality

Competitive equilibrium can "be regarded, in a well-defined sense, as superior to a wide range of possible alternative dispositions" [Arrow and Hahn, 1971, p. vii]: not only does the equilibrium express a coherent allocation of economic resources, but this allocation is collectively preferable to many others.

It is the first theorem of welfare economics (1951) that establishes this: under certain assumptions (non-saturation of needs = non-satiety; a complete system of markets = one price per economic good), every general equilibrium is a Pareto optimum, that is: a situation in which the satisfaction of agents cannot be obviously improved.

i) The concept of Pareto optimality

The concept of optimality is defined independently of the concept of equilibrium. Economic equilibrium is defined by the equality between supply and demand, which depend on prices, preferences, endowments, and production techniques. Optimality is defined *independently of supply, demand, prices, and even production techniques*. It depends only on consumers' preferences, even when a production economy is considered.

A situation is optimal if it is impossible to improve the situation of one agent without worsening that of any other. Conversely, a situation is sub-optimal if it is possible to improve the situation of at least one agent without worsening that of anyone else.

The definition of the Pareto optimum results from the application of a criterion (the Pareto criterion) that makes it possible to compare situations.

- Pareto criterion: a situation is preferred to another according to the Pareto criterion if it is strictly preferred by at least one agent, and weakly preferred by all. This criterion for comparing possible situations is unanimous, that is: it requires the unanimity of agents. A situation is preferred according to this criterion if the agents unanimously prefer it, whether strictly or weakly. A situation is *optimal* if, when compared to all other possible (or conceivable) situations, none of them is preferred to it according to the Pareto criterion. Note that this criterion is incomplete: it does not make it possible to settle comparisons between situations when agents' judgments are not unanimous (see below).
- Pareto optimum: an optimum is a situation A such that no other possible situation (B, C, etc.) is collectively preferred to it. A collectively preferred situation is strictly preferred by at least one agent and weakly preferred by all the others.

Note. "Improving" an agent's situation does not mean here enriching the agent (with a monetary evaluation of the enrichment). In an exchange economy, for example (which simplifies the reasoning without changing it), whatever situation is considered (optimal or sub-optimal), it is impossible to enrich one agent without impoverishing another. But it is possible to improve an agent's situation not in terms of wealth (objective, monetarily measured social wealth) but in terms of utility or preference (a subjective evaluation specific to each individual). The characterization of Pareto optimality depends solely on preferences, which can be expressed by a utility function (ordinal utility). Thus, there exist sub-optimal situations, i.e. situations in which it is possible to improve the situation of at least one agent without worsening that of anyone else.

Two examples

(1) A fictive economy

In an economy made up of smokers and non-smokers (assuming that smokers do not pollute non-smokers), consider an initial situation in which tobacco is distributed equally among all agents. Non-smokers have as much tobacco as smokers, even though they derive no utility from it. This situation is sub-optimal because there exists at least one other situation (in which tobacco is distributed only among smokers) that is preferred by smokers and that is no less satisfactory for non-smokers (who lose no utility by being deprived of tobacco). In this example, moving from the first situation to the second does not involve any exchange (or, at most, involves an exchange of tobacco at a price of zero). There is *a priori* no concept of exchange, price, supply, or demand involved when comparing two situations by asking the question of optimality.

(2) Involuntary unemployment

GET can interpret the Keynesian idea of involuntary unemployment as a sub-optimality. Unemployment (an excess of supply on the labor market) coexists with a demand for goods that is too weak to justify hiring the unemployed. A situation of full employment would be preferable for firms (which do not hire only because the demand for goods is too weak, whereas they would gladly hire the unemployed if demand for goods were higher) and for workers, among whom are the unemployed who would demand goods if they were employed. The economy is stuck in a sub-optimal equilibrium.

Pareto sub-optimality is a collective irrationality. It is collectively irrational to wish to remain in a sub-optimal state: if the situation of one agent can be improved without worsening that of any other, what argument could oppose it? This is why it is very effective to show that a situation is sub-optimal and to present an economic policy as the means of restoring optimality.

ii) Optimality and distributional conflicts

On the one hand, it is common (though not systematic) for the comparison between two situations to be impossible. This is the case as soon as the judgment of at least one agent regarding this comparison strictly differs from that of the others.

Example. In an exchange economy made up of several agents (at least two), consider different distributions of resources:

- Distribution A, highly unequal: one agent possesses all the resources. It is Pareto optimal: it is impossible to improve anyone's situation without taking away part of the wealth of the sole holder of all the wealth, and thus without worsening his situation.[1]
- Distribution B, egalitarian : everyone possesses the same resources (the same quantity of each good). It is sub-optimal if agents' tastes differ (cf. the previous example of smokers and non-smokers).

Almost all agents prefer distribution B to distribution A. But there is no Pareto ranking between these two situations, due to the lack of unanimity among agents' judgments when comparing the two situations. In comparing A and B, agents' judgments differ and reveal a conflict in the distribution of resources that the Pareto criterion cannot resolve: these two distributions are incomparable according to this criterion. It remains that the sub-optimal one implies a regrettable waste of resources: it would be collectively preferable for everyone's resources to be adjusted to their tastes.

This example also shows that optimality can go hand in hand with the greatest inequality in the distribution of wealth. Optimality says nothing about the justice of a distribution of

[1] Unless one assumes that the agent reaches satiation without consuming all the resources.

resources. This is indeed why Arrow and Hahn choose the term "Pareto efficient" instead of the more common "Pareto optimal," which, in their view, carries more prescriptive content than the concept should, "since a Pareto-efficient allocation may assign very low utilities to certain households and therefore not be optimal in any sense that includes distributional ethics." [Arrow and Hahn, 1971, p. 91].

As a result, a particular Pareto optimum is not always desirable. Pareto optimality is not sufficient to select or justify an allocation of resources.

The indifference of Pareto optimality to the justice of resource distribution argues for the introduction of an additional criterion of justice. This does not invalidate the Pareto criterion.

- First, because optimality remains desirable even though it is not justice.
- Second, because the independence between optimality and justice certainly highlights the limits of optimality but also attests to its generality: since there are various conceptions of justice, the Pareto optimum, being tied to none of them, is possibly compatible with all of them.
- Moreover, in an economy, the Pareto optimum (PO) is not unique. Except in special cases, there is a large number of optima, most often an infinite number (cf. second-year microeconomics, the set of POs is the contract curve). These optima are incomparable with one another. The existence of an infinite number of Pareto optima, incomparable with one another, suggests that considerations of justice can be introduced to select, *among the optima*, the one that is most consistent with justice. Taking justice into account does not invalidate Pareto reasoning: it merely highlights its incomplete character, since the criterion does not allow all possible situations to be compared with one another, and optimality does not allow a single state to be selected among all the others.

2. The first theorem of welfare economics

The first welfare theorem establishes a relationship between Pareto optimality and competitive equilibrium. First, the relationship between exchange and optimality must be clarified. We defined optimality without any reference to exchange. But it can be reformulated through exchange.

i) The Pareto criterion and mutually beneficial exchanges

Exchange is assumed to be voluntary: agents only trade if they gain an advantage from it or, at least, if they lose nothing by it. Every exchange is therefore mutually beneficial. If this were not the case, no one would want it and/or the disadvantaged party would refuse it. Voluntary exchange therefore leads to a final distribution of resources that is preferred, according to the Pareto criterion, to the initial situation. Agents' consent guarantees this: they only accept the exchange because they find an advantage in it. This advantage is not an objective enrichment, since exchange neither enriches nor impoverishes anyone. It is a subjective gain in well-being.

In other words, from the point of view of wealth, exchange is a zero-sum game (there can be no overall enrichment through exchange), but from the point of view of utility, exchange is a positive-sum game: all participants gain from it. Exchange therefore makes it possible to move from one situation to another that is preferred to it according to the Pareto criterion.

Moreover, as long as the distribution of resources is not a Pareto optimum, there remain possibilities for exchange that have not been exhausted (= that have not been carried out). Indeed, by definition of a sub-optimal situation, it is possible to improve the situation of at least one agent without worsening that of the others. Thus, the agent whose situation can be improved can propose a mutually beneficial exchange to one or more others. It is only once a Pareto optimum has been reached that there is no longer any mutually beneficial exchange available. Different distributions of resources are certainly still possible, but they could only occur at the expense of at least one agent: they can therefore no longer come about through voluntary exchange.

ii) Competitive equilibrium

Among all possible exchanges, competitive exchange (= at competitive prices) is the one that leads to competitive equilibrium. The first welfare theorem establishes a property of competitive equilibrium. Under specified assumptions concerning agents (convexity of preferences and of production techniques — convex indifference curves, non- increasing returns to scale, decreasing marginal productivities) and concerning the organization of markets (existence of a complete system of markets: there exists one and only one price for each good), competitive equilibrium is a PO.

This property largely explains economists' interest in studying competitive equilibrium and in presenting it as a desirable situation.

It is nevertheless obvious that the assumptions of the first welfare theorem are not always satisfied. In a second stage of the analysis, these assumptions are amended (= modified). General equilibrium theorists have therefore carefully studied situations in which these assumptions do not hold.

3. The GET method: testing the robustness of the equilibrium's optimality property

i) The consequences of changes in assumptions

The method consists in asking what the consequences would be of a change in assumptions for the optimality result of the equilibrium.

> Will it survive a change of assumptions from a perfectly competitive economy to an imperfectly competitive economy? Will it be overturned by external economies, by apparent irrationalities such as 'judging quality by price', by the lack of sufficient future markets, or by the special role that might be taken by the medium of exchange? (Arrow and Hahn, 1971, p. vii).

Far from asserting that a market economy always leads to an optimal equilibrium, general equilibrium theorists suggest, on the contrary, that changes in assumptions can call into question the optimality of the equilibrium.

> Modern economic theory has gradually refined the conditions under which the price system might not achieve efficient or optimal resource allocation. Many of the discussions have revolved around three classical reasons: invisibilities, inappropriability, and uncertainty, and around such concepts as increasing returns, externalities, public goods, transaction costs, and market failures pointing, inter alia, to the incompleteness or the limits on the theoretical validity of the price system whereby certain actions though they may lead to private advantage may result in social ill [Arrow, 1985, p.109].

In all these cases, individual actions decided on the basis of private interests do not allow the collective interest to be achieved. This is why general equilibrium theory developed by modifying the assumptions of the competitive general equilibrium model, and by studying the consequences of these modifications for the properties of equilibrium. GET should therefore not be credited with the idea that economic equilibrium, even competitive equilibrium, is always optimal. GET claims only to be able to establish the conditions of validity of this idea and, conversely, the reasons for the inefficiencies (= sub-optimalities) of market coordination: the assumptions that make it possible to establish optimality indicate, by omission, the reasons why equilibrium might well not be optimal, and hence the grounds for doubting the desirability of competitive equilibrium.

The purpose of the perfect competition model is therefore not to systematically justify the intuition that price coordination leads to a collectively desirable situation. The purpose is to establish the conditions under which this intuition is well-founded, without prejudging their empirical validity, and to study the conditions under which this intuition is not well-founded.

Examples.

- When returns to scale are increasing, on the one hand competitive equilibrium does not exist, and on the other hand production is (technically) less efficient when it is carried out by several firms rather than by a single one (cf. second-year microeconomics, semester 4).
- When externalities or public goods exist, competitive equilibrium exists but is not Pareto optimal (cf. second-year microeconomics, semester 3).
- When agents behave in ways characteristic of imperfect competition, the equilibrium resulting from supply and demand is not the competitive equilibrium and, most often, is not optimal (cf. second-year microeconomics, semester 4).

ii) The critique of the assumptions of perfect competition

The critique of the assumptions of the existence and optimality theorems of equilibrium can, wrongly, be understood as a critique of the general equilibrium model. Yet it is part of the

model and fits into it without difficulty. General equilibrium theorists are aware that these assumptions are generally not satisfied. They are advocates not of these assumptions and of the conclusions to which they lead, but of a method that clarifies the circumstances under which competition (understood as the assumptions of the existence theorem) is associated with optimality. The aim of this method is not to conclude that competition is always linked to optimality, but to establish the causes of sub-optimalities. Sub-optimalities may be due to imperfections in competition, but also to characteristics of production techniques (increasing returns to scale), of goods (externalities, public goods), or of market organization (the absence of markets for all future goods).

In a second stage, the theory that has established the reasons why equilibrium is either not competitive, or, if it is, not optimal, studies ways of restoring optimality.

> The point is this: It is not sufficient to assert that, while it is possible to invent a world in which the claims made on behalf of the invisible hand are true, these claims fail in the actual world. It must be shown just how the features of the world regarded as essential in any description of it make it impossible to substantiate the claims. In attempting to answer the question, "Could this be true?", we learn a good deal about why it might not be true. [Arrow and Hahn, 1971, p. vii].

Criticisms of general equilibrium theory made by invoking the failure to satisfy competitive assumptions do not call for a change of theory. On the contrary, they contribute to the development of this theory.

iii) GET and economic liberalism

Drawing on the existence and optimality theorems, one can conclude that, if the prices used in exchanges are competitive equilibrium prices (those determined by the system of equations that defines equilibrium, and which the existence theorem shows do exist), then the decisions made by each individual lead to an optimal final allocation of resources. In that case, the realization of these prices should not be prevented. In this sense, the existence and optimality theorems make the case for liberalism, that is: for competition, which is assumed to lead to competitive equilibrium prices.

However, the first welfare theorem indicates, by omission, that when the assumptions sufficient to guarantee optimality are not satisfied, competitive equilibrium prices do not lead to an optimal situation. In this sense, departures from the assumptions of the first welfare theorem run counter to a liberal position in economic policy. Frequently, when the equilibrium is sub-optimal, the State must intervene: to make decisions that agents do not make themselves, or to impose competition.

A large proportion of Keynesian authors of the second half of the 20th century use a GE method: unemployment is the manifestation of a sub-optimality of competitive equilibrium. The State must intervene to restore optimality.