

## 6 Competition between firms

This chapter completes the description of the evolutionary conception of markets by introducing what competition is about in this framework. Chapter 4 has introduced irreversibilities and has given insights on how they may affect the functioning of markets and the aggregate outcomes by acting on the adjustment of individual actions. Chapter 5 has introduced the possibility that agents act mimetically thus affecting the way individual actions aggregate into market outcomes. This chapter introduces competition as a process that forces agents – here firms – to act in certain ways or make them vanish if they do not. The three chapters of this second part of the book thus provide insights to the reader on markets as institutions that make individual actions interdependent and that therefore affect agents' actions, the way they adjust, and the way they aggregate.

### 6.1 Background and problems

#### 6.1.1 Reference models

In order to define what is “competition” in the standard approach to markets, two emblematic models of competition are briefly recalled: the Walrasian model of “perfect competition” and the Cournotian model of “imperfect competition”. While numerous developments have taken place in the domain of imperfect competition in the last thirty years (see Tirole, 1995), they do not change the conception of competition brought about in the standard approach to economics and even reinforce it by enlarging the variety of situations that are described in that framework.

The Walrasian model describes a market situation in which several “perfect competition” conditions are met. The exchanged goods are homogeneous, divisible and non stockable. The buyers (consumers) and sellers (firms) know the available goods and act optimally with regard to their information. In the short run, the agents are small and have no market power. In the long run, there is free entry and exit from the market. From these primary conditions, the theory infers that the transactions are realized under a price system satisfying secondary conditions. For each good, there

exists a unique price for all agents and transactions. Such a price is perfectly known by all agents. The agents act optimally by considering the price as exogenous (they are “price takers”). Each agent may proceed to any transaction at that price. From these last conditions, the theory infers that each agent expresses a supply or demand by equalizing the price with his marginal cost or utility. In the short run, the price of each good equalizes the total demand with the total supply. In the long run, the price converges towards the minimum of the mean cost, which implies that the firms make no profit.

The Cournot model describes a market situation in which some “perfect competition” conditions are relaxed. The firms are no longer small and have some market power, contrary to the buyers. They know not only the goods, but the characteristics of their rivals. Hence, they become “price makers” since they impose the prices of the goods they produce. They act optimally by expecting the behavior of their rival. Finally, each firm defines a reaction function which tells what quantity to supply for each possible quantity supplied by its rival. The price results from the compatibility of the reaction functions.

Those two emblematic models are similar in one essential dimension: their reliance on a notion of equilibrium. The concrete process leading to such an equilibrium is not precisely stated. However, it is possible to consider that it results from “rational expectations”. The agents have a perfect factual and structural information on their interaction context and form optimal expectations with regard to that information. In the Walrasian model, each firm perfectly expects the prices and reacts to them in a parametric way. In the Cournot model, each firm simulates the opponent’s behavior and fixes his own supply accordingly.

In fact, the standard approach to competition is a theory of coordination in the allocation of resources. As emphasized by J. Vickers (1993) “competition is an equilibrium state of a market dependent on those fundamental forces of demand and cost structure that determine the number of viable survivors. That is to say the state of competition is equated with the structure of the market which is measured by the number and relative size of the surviving firms. From this follows the familiar taxonomy with perfect competition at one end of the spectrum and monopoly at the other, each defined in terms of a relation between market share and the consequential ability to increase price above marginal costs. Between these extremes lies less clear cut territory either in relation to the idea of monopolistic competition or in relation to concepts of oligopolistic interaction in which expectations of rivals behaviours have overwhelming significance”.