The purpose of this chapter is twofold: to contrast the theoretical and empirical approaches traditionally adopted in industrial organization with those developed in recent years and to use this new context to put into perspective the recurring debate between the proponents of "natural" adaptation of industry to environmental conditions and those whose analysis focuses on the "strategic" dimension and the manipulation of environment.

1.1 Classical Industrial Organization

To analyze a market, either from the viewpoint of a firm operating (or envisaging entry) in the market or that of public authorities trying to evaluate the existing situation in order to formulate the rules of the game, it is necessary to describe the market. Hitherto the principal aim of most research in industrial organization has been precisely to provide this description by referring to the usual classical paradigm relating market structures, the behavior of economic agents, and their resulting performance. The basic questions, whether they concern a company or a public authority responsible for antitrust or industrial policy, remain similar. So far as market structures are concerned, the questions relate to the number of competitors in the
market and to the distribution of the market shares in the activity, to the degree of strictness of the conditions of entry and exit, to the standardization of the product and its relative proximity to substitutes, to the existing vertical integration of the activity, to the quantity of information retained by participants, and to the importance of the risks encountered. With regard to economic behavior, the questions must determine the respective roles of price and non-price strategies, the level of cooperation attained among agents over time, the application of strategies of differentiation and diversification, and so on. Finally, the examination of outcomes, whether in terms of resource allocation, observed profitability, or growth, would complete the approach.

Such a study of structure, behavior, and performance should then make it possible to answer a fundamental question: What form does competition take in the market? Naturally, the sense of the question varies according to who poses it. For public authorities the intention is to determine whether or not the natural forces of competition inherent in the market lead to an efficient allocation of resources and to socially acceptable distributions. From the enterprise's point of view, it is important to know whether its current or prospective relative position is sufficiently differentiated, protected, and "imperfect" for it to extract a substantial profit.

Several studies in the literature on industrial organization have provided a useful framework, and they allow the identification and classification of some complex competitive phenomena of industrial society. They have bequeathed a certain substance to the famous "empty boxes" of traditional microeconomic analysis. Nevertheless, until the 1960s a great many authors had employed a dangerously restrictive perspective.

It is worth emphasizing two shortcomings of the classi-
cal industrial organization, one theoretical and the other empirical. On the theoretical level the effort to place the analysis within the context of a well-defined microeconomic model has often been lacking, and the precise form of oligopolistic interdependence has rarely been explicitly defined. On the contrary, emphasis has been placed on describing market structures and their direct links with realized performance. The role of agents' behavior is minimized in the sense that firms are assumed to have the same objective and to adapt themselves more or less passively to their industrial environment.

Let $S$, $C$, and $P$ be variables representing sets of market structure, conduct, and performance, respectively. "Structuralist" authors would write

$$C = C(S),$$
$$P = P(C, S) = \phi(S).$$

From this viewpoint industrial organization is a model in which change is treated as exogenous and where behavior and performance are structurally determined. It is also a static system (or rather a comparative static one) that does not take into account that competition is an evolving and historic process with possibilities of interactions, going, for instance, from performance to behavior and from behavior to certain structures that thus become endogenous.

On the empirical level two types of study characterize the traditional outlook: case studies and econometric studies. Case studies, which were particularly prolific in the 1960s, have provided a better understanding of some industries and of some markets. The consideration of qualitative aspects has clarified the complexity of industrial reality, whereas quantitative measures, such as the degree of concentration or the profit rate, have provided simple summary indicators of the observed situation. These many
cases, however, have not given rise to much hope that a general outline can be made and further developed.

After the 1960s econometric studies increased and set themselves the task of going beyond the limit of case studies by finding statistically significant links between some indicators of performance, such as the profit rate, and a whole set of indicators of market structure, in particular, the degree of concentration. These regressions have been based on cross sections of industries. Their objective is essentially to test simple hypotheses, possibly applicable to all markets, such as the existence of a linear relationship between the degree of concentration and the rate of profitability in the industry. The theoretical arguments that are used to include or exclude a particular structural aspect from a list of explanatory variables are often ad hoc, made without any clear reference to an underlying general model of which the tested equation is the reduced form. Moreover, the interpretation is a causal one—ceteris paribus, a high degree of concentration should result in a higher rate of profit—rather than an equilibrium relationship.

The obvious weaknesses of this approach should not, however, make us forget that it is often under the pressure of the questions raised in the applied literature on industrial organization that theorists have gradually been led to abandon the reassuring foundations of traditional models and to provide a rigorous basis for concepts and perspectives hitherto undiscovered. Moreover, we should remember that many of those who have studied industrial organization have already noted these shortcomings and have enriched the microeconomic theory of their time by incorporating new behavioral hypotheses. As we will see, this is particularly the case for the theory of "limit pricing" and the organizational theory of the firm.
Recently, traditional approaches have been renewed, leading to what some do not hesitate to call "the new industrial organization" (Schmalensee 1982). I describe this next.

1.2 Features of the New Industrial Organization

What has come to be known as the new industrial organization presents innovative methodological aspects, and, moreover, it relaunches on the basis of more technical analysis the eternal debate between those who see in our industrial economies an efficient adaptation to external technological conditions and those who see complex games of power and economic domination in them.

Methodological Aspects

Compared with earlier studies, recent research increasingly is using tools of microeconomic theory, models of imperfect competition, and notions of game theory. Going beyond the extreme cases of perfect competition and monopoly, concepts of solution grow in number, such as Stackelberg's price leadership, Cournot-Nash equilibrium, and monopolistic competition. Oligopolistic interdependence has been explained as much in terms of cooperative games as by models of noncooperative behavior.

Furthermore, dynamics in industrial structure has come to replace static approaches. Schumpeter (1950) has already stressed the intertemporal framework within which the competitive process should be placed.

The best way to realistically visualise industrial strategies is to observe the conduct of new organisations . . . who introduce new products or new processes . . . or who reorganise a part or whole of an industry. (p. 83)
We must therefore assume that economic agents are making sequential decisions and taking into account the consequences of their actions on the subsequent evolution of industrial activity. This approach leads to the use not only of dynamic programming methods, optimal control theory, and differential games but also to the economic history of industries and firms. It also allows for the fact that within this context buyers and sellers do not have perfect knowledge of the particulars of their partners or adversaries, their preferences, or their means. Situations of complete and incomplete information are treated differently, and new concepts of equilibrium are developed (perfect equilibrium, Bayesian equilibrium).

These methodological perspectives have an important implication. Rather than looking for the model which permits simple generalizations that can be applied to most industries, as previous authors would have liked, it seems inevitable that we must develop a whole range of models from which one model specific to the market under study can be selected. Contrary to monism, such eclecticism is paradoxically similar to the concern of losing, as a result of modeling, the qualitative richness of the information supplied by case studies. Monism and eclecticism may in fact be complementary, in the sense that the model can be adapted to the major observed features of the industry, namely its structure, its behavioral patterns, and its performance. Beyond this a typology of behavior and markets can be made to correspond to appropriate models.

Empirically, the econometric analysis based on inter-industry cross sections that is plagued by many problems of interpretation has been complemented by time series analyses of the same industry on the one hand and by intra-industrial comparisons on the other, where the heterogeneity of economic agents, their performance, and their strategies within the same industry can be tested.
The Renewal of an Endemic Debate

The setting up of models and hypotheses follows not only the path of logic but also a whole set of presuppositions tied to the social and political context in which they are developed. In one way or another we can always maintain that scientific thought is deeply rooted in social reality. Ladriere (1976) writes:

Such a context can only be elucidated by taking into account the implicit (and perhaps explicit) projects upon which it is based. (p. 7)

It is, for example, clearly admitted in economics that determining the requisite conditions for the coherence of a decentralized system, whose efficiency is ensured by prices, is totally different from demonstrating its conformity with existing markets. Nevertheless the development of models rapidly leads to judgments on their relevance to the real economy and to assertions of political economy that may well go beyond the narrow limits of the adopted theoretical framework.

The issue is particularly delicate in evaluating the role of the search for technical efficiency and the role of market power in observed economic behavior. This debate, which has always underlain industrial economics, reappears in most works on the "new industrial organization" in a more rigorous form. Two viewpoints can be distinguished in the literature. The first one considers that productive structures, existing market forms, and organizational methods adopted by enterprises are a good approximation of the efficient adaptation that should result from some external order dictated by the existing technology.

Given the output vector in a specific market as well as the monetary value of the required physical and organizational inputs, the natural market structure will emerge,
that is, the one in which the corresponding monetary value of inputs is lower than the monetary value of inputs required for any other possible allocation of outputs. Minimization of both production and transaction costs is then obtained.

In contrast, the second viewpoint stresses the role of economic agents modifying their environment instead of being subjected to predetermined conditions. These are innovators of combinations and of new forms; they can manipulate their environment and can determine to some extent market conditions. In this perspective the configuration of industrial structures and organizational forms is as much the outcome of deliberate strategies as of initial conditions and predetermined rules of the game. Referring back to the functional relationship between market structure and realized performance, one can, for instance, consider the evolution over time of market structure to be determined by a transformation that depends not only on structure at moment $t$ and on time but also on conducts $C$.

These two approaches, which incidentally are not necessarily totally contradictory, must be put in a wider intellectual framework in which ideological presuppositions are increasingly evident. In fact, one can envisage the evolution of our industrial societies as a selection process in which the fittest economic agents, social groups, nations, and institutions emerge. Hierarchies and the dominance of certain forms would then be the outcome of a selective filtering process and of a diffused competition tending to maximum efficiency.

Economic and social institutions, the distribution of income, and the international division of labor are expressions of the adaptation to a "natural" order dictated by technology, factor endowments, and qualifications and productivity of individuals. These notions are similar to some ideas of classical economics, such as those of Adam
Smith, and today find a new dimension in the application of sociobiology to economics. In contrast, other analyses portray the economic agent, be it the firm or the state, as striving to orient its evolution, to use innovation in order to provoke ruptures, to impose new norms and new forms of equilibrium, rather than to submit to the environment: Some economic agents alter the institutions and the rules of the game; the comparative advantages between nations are partly fabricated or imposed; income inequalities are partly the outcome of actions of groups defending their interests and more fundamentally depend on the underlying sociocultural relations. The main driving force behind the undeniable process of evolution is therefore not a mechanical selection, and its logic is not merely the requirements of the environment.

It is well known that “competition between paradigms is not the kind of battle that can be won with proofs” (Kuhn 1970, p. 204). Rather than trying to resolve a debate, the purpose of this book, as explained in the next section, is to throw some light on the two approaches presented in the preceding paragraphs. My preferences will nevertheless not remain undiscovered!

1.3 The Subject Matter of This Book

The rest of this book is a series of essays aimed at presenting in a simple form some of the analyses of the new industrial organization applied to the enterprise, its market relations, and its internal organization.

In order to outline the major features of these works and their possible implications for economic policy, the following presentation is adopted: contrasting the perspective that industrial economy adapts itself to the norms of an efficient allocation of resources with that which stresses the role of market power.
The second chapter is devoted to selective market mechanisms. The hypothesis of profit maximization, dynamic competition, and long-term stationary equilibrium of an industry are analyzed in the context of the Darwinian outlook of adaptation to environmental constraints.

In the third chapter I discuss the behavior of corporations trying to exploit oligopolistic interdependencies. A discussion of the significance of the degree of concentration is followed by the presentation and comparison of various models of oligopoly in price and quantity.

The role of potential competition is introduced in chapter 4. The analysis of its favorable effects as a market discipline is followed by a comparison of "natural" and "strategic" barriers. Static and dynamic models of entry are then presented, shedding some light on conditions of market power.

I discuss the organizational forms adopted by the enterprise in chapter 5. I begin by describing theories according to which the choice of the organizational form is designed to minimize transaction costs within the firm. The multiplicity and coexistence of different forms of organization are then studied, raising the question of the predominant form. The organizational form is finally considered as a strategic variable that might help the firm exercise control over the market.

The sixth chapter is devoted to the different roles assigned to industrial policy, depending on whether the emphasis is placed on spontaneous adjustment to market forces or on strategic behavior. It leads ultimately to the choice of the model of society. Beyond Darwinian analogies, sociobiology and bioeconomics propose a model of society based on natural selection, that is, a set of mechanisms sorting out individuals, organizations, and institutions that are most suited. In contrast, there is a model of society in which evolution preserves diversity and in
which the behavior of agents can mold environment to a great extent toward their objectives and can control it by deliberate choices.

References


