2. The EMSs Approach to Macroeconomics

Sometimes the road less traveled is less traveled for a reason?

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In this chapter we start our review of an approach to macroeconomics that is in part alternative and in part complementary to the neoclassical one. We depart from the perfectly competitive environment, in the sense that firms do not take prices as given, but they do choose their strategies and they interact strategically. We focus not only on the choice of prices as the strategic variables, but also on the choice of output levels, and on the choice of entry to produce new or better goods. In most of the analysis of this book we adopt either symmetric Cournot competition or symmetric Bertrand competition as the main models of static strategic interactions, but we will occasionally introduce other forms of competition, as Stackelberg competition or models of imperfect collusion, and we propose a general approach that can be employed with more sophisticated competitive structures borrowed from research in the field of industrial organization. As a matter of fact, one of the main aims of this book is exactly to build a solid bridge between macroeconomics and industrial organization.

The new ingredients of the endogenous market structures (EMSs) approach will be on the supply side of the economy. The technological conditions will be characterized by positive fixed costs of entry so as to move beyond the constant returns to scale hypothesis. To a large extent, we will also depart from the neoclassical assumption that investment (of final goods) builds the physical capital that is used as factor of production together with labor supplied by the working class. That was a good assumption to describe production in the industrialization phase, characterized by the dominance of the secondary (manufacturing) sector and by the social conflict between capital and labor, but not such a good one to describe production in the modern age, dominated by the tertiary (service) sector and by the New Economy, where ideas, innovations, intellectual property rights and creativity are the main inputs needed to create new products, and where the value of start ups without any capital can be high because of these intangible inputs. For this reason, we will embrace a concept of investment (in terms of labor or consumption...
units) needed to enter in the market with new products (or with better products) produced through labor.\footnote{This does not mean that we will ignore the accumulation of stock variables, but only that they will play a different role: we will focus on the development of the stock market value and on the accumulation of innovative ideas.} This will establish a two-way link between investment and market structure: profitability in the market attracts investment to create new products, and the creation of new products by means of investment enhances competition and reduces profitability in the market.

Finally, we will endogenize the entry decision of the firms as a rational profit maximizing decision. As we have seen at the end of the previous chapter, the New-Keynesian literature has taken into consideration the rational behavior of monopolistic firms in the choice of their profit maximizing prices, but it has typically neglected the rational behavior of the same firms in the choice of entering in the market if and only if positive profits can be expected. As a consequence, there was no link between profit opportunities and production or any other aggregate variable. Our analysis of the entry process leads to the final characterization of the EMSs.

In a sense, our approach can be seen as a natural evolution of the neoclassical approach, which has been guided by the attempt of introducing rational behavior in all the aspects of decision making. The rational theories of consumption and labor supply and the theory of rational expectations (as opposed to adaptive expectations) have been the building blocks of the neoclassical approach. However, a rational theory of entry in markets in which there are profit-maximizing strategic firms has not been introduced until recently.\footnote{There is an old partial equilibrium literature which investigates the endogenous entry process on the basis of an adaptive mechanism rather than a rational one.} This is the additional contribution of the EMSs approach.

An EMS is defined as an equilibrium organization of a market where each firm chooses its own strategy to maximize profits taking as given the demand conditions and the strategies of the other firms, and where the number of firms is such that all of them make non-negative profits and further entry cannot provide positive profits. We will often refer to a simplified situation with a symmetric equilibrium in which all firms choose the same strategy and they obtain the same profits, and we will approximate the exact equilibrium assuming that the number of firms is a natural number. In such a case an

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N_{t+1} = (1 - \delta_N) (N_t + N_e^t) \quad \text{with} \quad N_e^t = \lambda \left[ I(N_t) - F \right]
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where $\delta_N \in (0, 1)$ is a rate of exit from the market and $\lambda > 0$ parametrizes the speed of entry. The evolution of this system can exhibit monotonic or cyclical convergence to the steady state, but complex dynamics can emerge as well. The exogenous and adaptive nature of this process is its limit, which will be avoided by the EMSs approach, where the number of entrants $N_e^t$ derives from an endogenous and rational process.