

1. Introduction

This paper analyses the notions of competition and monopoly power in the writings of two well-known Italian marginalists: Vilfredo Pareto (1848-1923) and Enrico Barone (1859-1924). As everybody knows, Pareto's profound impact on economics is mainly due to the concepts of "Pareto optimality", "cardinal utility", "Pareto's Law" of income distribution, and in general to the refinements of Walras' general equilibrium theory¹. Barone, who became an economist after spending much of his life as an army officer, is known mainly for his independent discovery of the marginal productivity theory, and even more for getting the "socialist calculation" debate started².

Their personal and intellectual relationships were very close. One example among many that testifies to the interweaving of their lives and work can be found in this passage in a letter from Pareto to Maffeo Pantaleoni: "All the theories I have set out are only the germs of theories. Economists, like Barone, who possess knowledge, culture and intelligence, should ... develop these theories, and seek *new* truths" (Pareto 1960: 445). Schumpeter reminds us that starting from the 1890s the economists belonging to the Italian Marginalist School took Italy into a leading position³, so there are good reasons to think that their ideas played an important role not only for Italian economic thought, but also worldwide.

Historians of economics have indeed studied the history of the profit maximisation analytical models in a non-competitive setting, starting from Cournot (1838). Nevertheless they have always neglected the analysis of economists' ideas on the causes of market power. I wish to demonstrate here that the history of the theory of imperfectly competitive markets can be significantly modified if the reconstruction of the way in which the economists of the past described the sources of market power is taken into consideration. From this point of view, marginalists are very important because of the new kind of entry barriers they identified.

2. Vilfredo Pareto

In Pareto's *Cours d'économie politique* (1896-97) the first definition of monopoly is based on the role of prices in the maximization of profit: Pareto solves the profit maximisation analytical problem in a monopolistic regime (following Cournot), and even takes up the treatment of duopoly, though we shall not be dealing with those issues here. Nor shall we get involved in the large number of well-known observations by Pareto on the inefficiencies of the monopolistic regime compared to the competitive one.

We shall deal here with his reflections on the causes of market power, that he traces in the *Cours* essentially to the "difficulty, or ... impossibility, that exists in transforming savings into certain kinds of capital" (§ 138). He also considers that "capital whose quantity remains virtually constant in a closed market" (*Cours* §

¹ Pareto was an engineer before succeeding Walras in Losanna (Kirman 1998).

² See Dooley (1998).

³ Schumpeter (1954, ed. 1976: 855).

542). The holders of this type of capital, Pareto writes, “will enjoy a monopoly ... that in some cases may be absolute. They will therefore be able to secure very considerable gains” (*Cours* § 543).

In the *Manual of Political Economy* (1906), he deals with the causes of market power listing the various ways entrepreneurs may eliminate competitors: “with the assistance of the law, or because he alone possesses certain goods, or because by intrigue, trickery, by his influence or his intelligence, he wards off his competitors ... Finally it must be noted that it often happens that a certain number of individuals join together precisely so that they can dominate the market” (Pareto 1906, ch. 3, § 47, Engl. transl. 1971: 117).

It is worth noting a passage in the *Cours* where Pareto criticises the excess number of small firms in the retail sector, an excess that “explains the easy success of the firms that start to compete with them, the big stores and co-operative societies” (§ 923). Since the retail trade is a sector where “fixed costs are quite important, it follows that the reduction of the coefficients of production depend above all on the increase of the sum of sales” (§ 923). This is essentially a brief passing reference to the concept of increasing returns to scale. In the *Manual*, on the other hand, he goes into the analysis of increasing returns to scale more deeply, given that it was by that time a more widespread phenomenon: “Some have assumed that the greater their output the better off enterprises would be, and this notion has given rise to a theory according to which competition must end up with the establishment of a small number of large monopolies. The facts are not in accord with this theory” (Pareto 1906, ch. 5, § 79, Engl. transl. 1971: 243). Pareto then develops a clear-cut theory on the existence of a minimum efficient scale: “for each type of production, there is a certain size of enterprise which corresponds to the minimum cost of production” (Pareto 1906, ch. 5, § 80, Engl. transl. 1971: p.234).

On collusions, Pareto in the *Cours* writes: “the desire to set up a monopoly is natural for all producers” (§ 799), and explains that this is the reason they try to form combinations and trusts. He is in favour of the spontaneous formation of combination, but is convinced that without the support of government (which he decidedly opposes) these agreements cannot last (*Cours* §§ 905-911). He also looks favourably on consumer co-operatives, which in his opinion “have introduced free competition where it existed only in imperfect form” (*Cours* § 922). He is essentially expressing the idea that the market power that derives from combinations, trusts and other forms of associations is always open to threat from potential competition. In the *Manual*, too, Pareto comes back to the subject of trusts: “Modern syndicates have two principal goals: 1. to give enterprises the size which corresponds to minimum costs of production ... 2. To escape free competition, in whole or in part” (Pareto 1906, ch. 9, § 10, Engl. transl. 1971: 339). Pareto’s line of thought is not crystal clear, but he would appear to be in favour of the first of these aims, i.e. to the search for the minimum efficient scale. Whereas he holds the pursuit of the second objective (to escape from competition) to be futile, unless the government intervenes to help out the trusts, thereby harming the consumers (Pareto 1906, ch. 9, §§ 13-15).

3. Enrico Barone

In the *Principles of political economy* (1908), Barone considers different causes blocking entry into a market. In addition to the usual legal monopolies, it is worth remembering the cases of unique resource, which Barone dealt with in relation to rent: “Ricardo’s theory on land ... is applicable to all capital that cannot be reproduced” (56). Writing after Pareto, Barone obviously dwells at length on the effects on social welfare of the various market regimes, and explains the reasons why “monopoly represents a diminution of consumer rent, and a destruction of wealth” (22).

However, the source of market power Barone mainly considers is the one coming from economies of scale. Barone directly faces up to the question of increasing returns to scale in the following terms: “If the cost of the unit of production indefinitely diminishes, to the extent that the quantity of the product increases, it would be advantageous for the production of every good to be concentrated in just one firm” (11). He thus examines the industries where the most efficient production is through a monopoly: “And this may happen whenever ... there exists ... a kind of firm, that at the limit of decreasing costs, is of a size sufficient to saturate, at the cost of production, the entire demand of the market” (191). In this case, he states, the surviving firm should not be considered a truly monopolistic firm, also for its different effects on social welfare⁴. Moreover in his opinion its market power is only apparent, in that it is subject to the threat of potential competitors (192)⁵.

Having clearly explained that the average costs curve is U shaped⁶, Barone sets out with similar clarity the idea of the minimum efficient scale as follows: “competition tends ... to define the size of firms; in other words the quantity produced tends to be shared out between the producing firms at the minimum cost so that each of them may produce the corresponding [quantity] at the limit of the diminishing costs” (15).

Again with clarity he describes the way the entry of new firms may drive the price down to the minimum average cost: “competition ... forces each firm to remain within the limits of the diminishing costs ... making, for the part that was produced at rising costs, a new firm intervene which does go beyond the limits of the diminishing costs” (16). From this derives the consequence (one Barone brings out), that since the optimal quantity offered by every firm, and hence its size, is given by the minimum efficient scale, it is precisely the action of competition which determines the optimum number of firms in equilibrium.

Barone then goes on to denounce those cases where the firms are smaller than their minimum efficient scale, and therefore are higher in number than the optimum number: “it happens that, ... because competition does not operate sufficiently, this maximum size of firms is not reached – and hence the number of these is not reduced to that minimum – to which corresponds the lowest cost of production” (191). In this case Barone says that it is more efficient for fewer firms to produce at less cost.

⁴ “These single or unique firms ... do not represent ... a destruction of wealth: the contrary may even be true” (192).

⁵ “These unique firms, emerging from competition, must always be in fear of the *potential* competition, ... of other similar firms that might emerge; this stops them from wholly adopting the procedures of the monopolist” (192).

⁶ The “curve [of total costs] is always rising; ... if it was reduced to a diagram with the *unit* costs of production on the y-axis, it would be diminishing until a certain point and then rising” (14).

The excess number of firms operating in the diminishing part of the average costs curve, and hence the chance to exploit further economies of scale, provides Barone with an argument in favour of the extension of firms' size. On this he examines the combinations, and vertical and horizontal integration. Combinations, based only on agreements, Barone judges intrinsically unstable and subject to "a latent state of war even during a peace" (212). The reasons for the other forms of collusion he traces to the search by firms for efficient size (216). In addition, he carries out an analysis of the determination of the price in the case of large firms, reiterating that their situation is quite different from that of the monopolist⁷.

In present-day terms, one could re-define the case Barone examined as relating to a *dominant firm*. He brings out the fact that such a firm may be subject both to international competition and to competition from other smaller firms that produce the same good, as well as in part to potential competition⁸. In his opinion the price fixed by the dominant firm will be below that of both domestic and foreign competition, and below what could "re-awake the potential competition" (234)⁹.

Conclusions

I have said that the historical reconstruction of the sources of market power has been neglected. Actually, as far as I know, the whole history of the theory of the sources of market power has not yet been written¹⁰. This is the reason why in this paper it was not a case of verifying or dismantling a historical reconstruction of the sources of market power, but to begin to write the history itself of the ideas about those sources. And this is why I thought it was useful to investigate the marginalist period, believing it to be an important phase in which new causes of market power are identified, as well as new instruments to examine it with.

Pareto and Barone believed in the efficacy of the market, and they also believed that market structures adjust very quickly to the most efficient configuration¹¹. This vision also finds confirmation when Pareto and Barone considered some of the causes of market power that the classicists had not. In fact, whereas for classical economic thought the only sources of market power considered were natural (resulting from the presence of scarce factors, like natural resources, location, talent), and legal (like patents, property rights, State privileges, State licenses), the marginalists develop the idea that there are also entry barriers of a technological kind (in particular scale economies and network economies), or strategic.

⁷ We should remember that in that period only those in possession of a government licence (legal monopoly), or a unique resource (natural monopoly), were considered to be monopolists.

⁸ "As for the potential competition, to tell the truth it is lazy and active intermittently. The struggle to rush into the fray against a vast trust, requires very great capital and is full of risks" (234).

⁹ The analysis of the determination of the price in this market regime, as also the welfare consideration, are treated by Barone in much greater depth than in our summary.

¹⁰ For a recent history of the concept of barriers to entry see McAfee, Mialon, Williams (2004).

¹¹ On the "coincidence between viewing competition as rivalry and opposing anti-trust law" see Di Lorenzo and High (1988).

Barone, for example, should be cited in the historical surveys of natural monopoly, understood in its contemporary sense¹². We have seen in fact that he puts forward Cournot's conclusion again, according to which "nothing limits the production of a commodity under conditions of pure competition if a firm's marginal cost is falling" (Marchionatti 2003: 50). This conclusion, as is well known, had been criticized by Marshall, who tried in various ways to reconcile increasing returns with competitive equilibrium (Groenewegen 1999, Hart 2004). In his *History of Economic Analysis*, Schumpeter expresses astonishment for the fact that after Marshall, discussion on this subject "took so long to burst into print" (Schumpeter 1954, ed. 1976: 1046). He asks himself how it was possible that "results were established in and after 1930 that might easily have been established by 1890" (Schumpeter 1954 ed. 1976: 1048). As we have seen, Barone's work, which had very clearly identified the terms of the problem of natural monopoly, fits comfortably within that period. We should note furthermore that Barone considers also this type of monopoly to be continuously threatened by potential competition, despite the presence of high fixed costs, a position later taken by Stigler (1968).

We have noted earlier that Pareto, and even more precisely Barone, had clearly discovered the fact that the number of firms present in the market might not be a good indicator of the monopoly power in the industry concerned. In the presence of scale economies, indeed, they believed that a low degree of concentration was a sign of inefficiency and low-level competition, not vice-versa.

Moreover, Barone and Pareto should also be remembered for their development both of U-shaped average cost curves, and of the idea of minimum efficient scale. In the history of the theory of non-competitive markets, these are important concepts, especially for the structure-conduct-performance approach¹³, since they permit the identification of different industrial configurations. We have seen that Pareto in 1906 mentions the idea of the minimum efficient scale, whereas Barone in 1908 explicitly describes a U-shaped graph, where the average total cost is on the y-axis¹⁴. This fact is in contrast with Scherer's statement that up until Fisher's textbook (Fisher 1912): "in the important theoretical developments emerging toward the end of the 19th century, marginal cost functions continued to be emphasized, and average costs neglected, by neo-classicists" (Scherer 2001: 900). Having illustrated the contributions of Pareto and Barone on these subjects, we believe that the historical reconstructions should be modified, and that these economists should be recognized as important here too.

¹² Referred to firms with large-scale economies, so that market demand can be satisfied at lowest cost by one firm rather than two or more (Sharkey 1982).

¹³ On the various approaches to the industrial economics see *inter alia* Martin (1994: ch.I).

¹⁴ See the quotation in note 6.

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