

The sources of monopoly power before Bain (1956)

Manuela Mosca¹

Abstract

The purpose of this article is to show that there is a gap in the literature on the sources of monopoly power. It looks at the literature on the history of different topics (Industrial Organization, Models of profit maximization in non-competitive markets, Antitrust, Competition) to find out which kind of limitation to entry economists before Bain took into account, the role they attributed to the number of firms present in the market, and their ideas on potential competition. It finds that there are good reasons to investigate the sources of market power in the Italian marginalist thought. The paper demonstrate that: 1. new filiations of ideas can be traced; 2. entry is not considered before 1950s only in analytical models, while in non formalized theory there is a lot on this notion; 3. economists were perfectly aware of the situation between perfect competition and monopoly before 1930s; 4. Italian marginalists used a kind of theory of strategic competition, which was an adaptation of the classical theory of competition; 5. competition policies were requested in 19th century not only in the U.S.

Keywords: history of economics, market power, monopoly, competition, barriers to entry, marginalism, Italian economic thought

J.E.L. Classification: B13, B21, D43, L10, L40

Address for correspondence:

Manuela Mosca

University of Salento, Dipartimento di Scienze Economiche e Matematico Statistiche,
Ecotekne, Via per Monteroni, 73100 Lecce (Italy).

E-mail: manuela.mosca@unisalento.it

¹ A previous version of this paper was presented to the Conference "Histoire des théories en économie publique" (Paris, 10-12 December 2008), in a seminar at the Dipartimento di scienze economiche e matematico-statistiche, University of Salento (Lecce, 14 January 2009), at the 73rd Annual Meeting of JSJET, Keio Gijuku University (Tokyo, 30-31 May 2009) and at the 36th Annual Conference of HES, University of Colorado at Denver (Denver, 26-29 June 2009).

I wish to thank Giampaolo Arachi, José Luís Cardoso, Alessandra Chirco, Yasunori Fukagai, Nicola Giocoli, Misaki Kayoko, Jan Horst Keppler, Ephraim Kleiman, Atsushi Komine, Michael McLure, Mary Morgan, Antonella Nocco, Cosimo Perrotta, Donatella Porrini, Ana Rosado Cubero, Torten Schmidt, Marcella Scrimatore, Rob Van Horn, Masazumi Wakatabe e Kiichiro Yagi for helpful comments. The usual disclaimers apply.

Any opinion expressed in the papers included into the Quaderni del Dipartimento di Scienze Economiche e Matematico-Statistiche belongs to the authors. Citation and use of these papers should consider their provisional character.

1. Introduction

Market power is “the ability of firms to influence the price of the product or products they sell” (Martin 1989: 16). This is our contemporary definition. But what do we know about the history of this notion? What do we know about when it was defined and how it was explained in the history of economic thought?

In this paper we distinguish four different fields of enquiry in which to seek a history of ideas on the causes of market power: the first concerns the history of the models of profit maximization in imperfectly competitive markets; the second, competition policies in a historical perspective; the third, the theory of competition in economic thought; and the fourth, the development of the notion of entry barriers. This paper is of an historiographical character and places this study within the existing panorama of the secondary literature; moreover, it has been written in the conviction that in the study of economic thought one cannot restrict oneself to simply narrating a history, one must also have some very good reasons for doing so.

2. Fields of enquiry

The four possible fields of enquiry in which to seek the origins of the notion of monopoly power are to be found within the pre-history and history of industrial economics and competition policies. This is the case insofar as market power is the characteristic feature of all imperfectly competitive markets, so the natural place to look to follow its historical development is in the theory of industrial economics, as well as competition policies. Nevertheless, as we shall be seeing, also the historiography of the theory of competition will provide various ideas for a history of the sources of market power.

2.1. The History of the Models

The first field of enquiry in which it would seem natural to find a theory of the causes of monopoly power concerns the attempts to

calculate equilibrium prices and quantities in imperfectly competitive markets. The history of these attempts has been reconstructed by many scholars², who all agree on the fact that it began with the work of Cournot (1838), followed by Dupuit (1844), Bertrand (1883), Launhardt (1885), Auspitz and Lieben (1889), Edgeworth (1897), Hotelling (1929), Chamberlin (1933) and J. Robinson (1933)³. In these models firms may have market power for a variety of reasons, one of which is that there aren't very many of them, although the reason for their small number is not explained. In effect, these models do not consider entry of new firms, so they don't pay much attention to the causes of market power, often taking them as given⁴. These are the reasons why the history of the profit maximization models in imperfectly competitive markets has little to say about the causes of monopoly power in economic thought.

2.2. *The History of Competition Policies*

The second field of enquiry concerns the history of the theory behind the two main competition policies, that is to say antitrust policy and regulation⁵.

2.2.1. The History of Antitrust

Since the specific purpose of the firms at which antitrust

² See, among others, Schumpeter (1954), West (1978), Stigler (1982), Niehans (1990), Ekelud and Hébert (1999), Puu (2002: 1-5).

³ The reason why I stop at the Thirties is explained further on.

⁴ Modigliani for example writes that "the impossibility of entry is frequently at least implicitly assumed in the analysis of oligopoly, following the venerable example of Cournot, with his owners of mineral wells" (1958: 216). And according to Ekelund and Hébert, among all the "pioneers" they cite: "Dupuit *alone* examined in detail the sources of monopoly" (1999: 19, our italics); we mentioned this in the introduction. Clearly, in the models of monopolistic and imperfect competition the cause of market power is explicitly indicated (product differentiation) (Hicks 1935).

⁵ "The main instruments of competition policy are: antitrust policy, the policy for the efficiency of financial markets, regulation, the production of public services, the policy for innovations and patents" (Grillo and Silva 1989: 501, authors'italics); here we restrict ourselves to considering the two main ones.

legislation is directed is that of obtaining and enhancing their own market power, it would be reasonable to expect to find the history of the discovery of the causes of monopoly power by analyzing the theories that have inspired antitrust legislation over the years. The history of antitrust policy starting from its origins has been the subject of a great many studies: some of these affirm that in the first decades of its activities antitrust was moved more by political and social considerations than by economic ones⁶; others argue the presence of a strong influence of economic theory right from its very beginnings⁷. This latter position⁸ would involve the possibility of reconstructing the development of the ideas on the causes of market power by a comprehensive review of the theories behind the antitrust legislation; however, even if one were to accept the most extreme version of this position, we still wouldn't find here the history we are looking for, for various reasons.

The first of these is that antitrust does not consider the existence of market power illegal *per se*⁹, but restricts its interest to those cases in which firms, to obtain it, adopt anticompetitive practices¹⁰. So we cannot find in this historiography a *general* interest in the causes of monopoly power¹¹, because its interest is limited just to

⁶ Peritz (1990) cit. in Giocoli (2009). Stigler in 1982 was still skeptical about the influence of the economists on antitrust policy (Stigler 1982).

⁷ See, for example, Kovacic (1992) and Meese (2003).

⁸ Such as for example that of Hovenkamp (1989b): "Antitrust policy has been forged by economic ideology since its inception" ([1991]: 136); or "The antitrust laws are ... eternally wedded to prevailing economic doctrine (157).

⁹ However, there are practices considered violations *per se* that it is held necessarily procure market power (and in fact do not require an enquiry into their existence); e.g. antitrust has almost always considered price agreements illegal *per se*, holding them to be clearly a cause of market power.

¹⁰ These practices consist of: collusive behavior, mergers and takeovers, monopolization (in the USA) or abuse of dominant position (in Europe). Within the latter, practices excluding rivals take on especial significance.

¹¹ For example, market power which all firms inevitably enjoy through the absence of perfect competition in actual markets is obviously not the object of enquiry by antitrust, as well as the one achieved due to merit, or the one deriving from natural monopolies.

those kinds of behavior¹² that generate it by restraining competition¹³.

The second reason is the following: if in the evaluation of illegal behavior the *rule of reason* approach is adopted¹⁴, judgment is based on the principle of reasonableness, according to which it is not enough that an action, to be condemned, restrains competition, it also has to restrain it *unreasonably*; by adopting this approach, therefore, an anticompetitive practice aiming at the acquisition of market power that, however, restrains competition “reasonably”, would not be condemned. In this context the relevant causes of monopoly power for antitrust change according to the judgment on its reasonableness, which further explains why the historiography of ideas behind antitrust legislation cannot contain a general analysis of the causes of monopoly power¹⁵.

The third reason is that the only economists who are believed to have influenced antitrust at its beginnings are Americans¹⁶; this cuts out the entire economic thought which, in the decades around the end of the nineteenth century in the rest of the world, focused on the development of a good deal of thinking on antitrust policies.

2.2.2. Industrial Regulation

Within this second field of enquiry we also need to use

¹² The attention paid by antitrust to market *share* is explicable in that it is considered as evidence of *behavior* that could have illegally generated market power.

¹³ And in the most recent approach this restraint also has to be “detrimental” (Motta and Polo 2005: xvii). A criticism of this approach is in Grillo (2006). See also the new approach put forward by Etro (2006).

¹⁴ In carrying out antitrust legislation the *rule of reason* has been widely adopted. See Kovacic and Shapiro (2000). The various meanings attributed to the *rule of reason* in the history of antitrust are examined in Grillo (2006).

¹⁵ On the relationship between the character of the violations and market power in a different perspective, but compatible with ours, see Krattenmaker, Lande and Salop (1987: 242).

¹⁶ See the examination of the literature in Giocoli (2009); the author formulates convincing hypotheses on the history of antitrust in Europe, which is beyond our temporal horizon in that, as is well known, it has much more recent origins (the *Treaty of Rome* was signed in 1957).

historical perspective for the theory of regulation policies; nevertheless, since policies of this kind aim to intervene in industries characterized by natural monopoly, they are linked to just one of the causes of monopoly power, i.e. economies of scale, which are included in our reconstruction, but by no means make up the whole of it ¹⁷.

2.3 *The Historiography on Competition*

The third research path turns to the literature on the history of the notion of competition, with the idea of arriving at information indirectly on the non-legal sources of market power¹⁸. This is not an easy thing to do, both because this historiography in general does not raise the problem of implications for ideas about monopoly power, and because the two notions are not always antithetical. Only if the competition is characterized by perfect elasticity of the firm's demand curve, is it antithetical to market power: the competition thus defined necessarily implies absence of monopoly power. In this case the list of the conditions necessary for competition provides us with all the information we need on the causes of market power: the latter in fact emerges exclusively if these conditions do not occur¹⁹. Yet as we shall see, the notion of *perfect* competition was fully defined only in the Thirties. Before that, competition was treated as an activity²⁰, and to compete meant to undertake strategies precisely to obtain monopoly power, i.e. to set prices so as to make positive profits²¹: in this situation clearly there can be no antithesis between competition and market power.

¹⁷ On the history of the concept of natural monopoly starting from its origins see Mosca (2008).

¹⁸ In this work we do not deal with legal sources because their recognition has never been problematic, being simply attributed to the government.

¹⁹ Machovec (1995: 179-181).

²⁰ As a result the term was applied to any kind of market structure. See MacNulty (1967: 397), Backhouse (1990: 59-63), Blaug (1997: 67; 2001: 153), Bradley (2009).

²¹ Which is a very different thing from assuming given prices and zero economic profit as in the model of perfect competition (MacNulty 1967: 399; 1968: 656).

On examining this literature to seek the causes of monopoly power we therefore have to be careful to distinguish between the two cases: whereas in the former the causes of market power coincide with the obstacles to perfect competition, in the latter the firms' behavior to obtain market power does not restrain competition because it is an expression of it; the latter can, however, be impeded for other reasons.

2.3.1. Competition in the Classics

We start with an examination of the literature on competition in the classics to find the causes of monopoly power. Beyond the legal restraints, that as we have already said do not come within the range of our present work, the uncovering of other sources of market power, such as limited knowledge, collusion, imperfect factor mobility and inelastic supply is down to Smith (1776); in addition it is held that for Smith the number of rivals in a market was important for determining market power²². It is stated that to Bailey (1825) we owe the interesting analyses of "monopolies" with restricted entry and *one or more* sellers, and of the markets in which the producers have a cost advantage over the new entrants, where monopoly power comes up against a restraint on potential competition²³. Senior (1836) is cited for having worked on the impossibility of transferring capital from one use to another without incurring losses, and of the unavailability of information of profits²⁴; at the same time it is thought that for Senior the number of firms was unimportant²⁵. J.S. Mill (1848) is remembered for having paid attention to consumers' "custom"²⁶; as for the number of firms,

²² Stigler (1957: 2 e 1987: 531-532) and Bradley (2009). On the contrary Blaug (1997) states that "only once did Smith ever mention the number of rivals involved in competition" (68).

²³ Backhouse (1990: 60-61).

²⁴ Stigler (1957: 3 e 1987: 532).

²⁵ Machovec, (1995: 118).

²⁶ Backhouse (1990: 66). Schumpeter (1954 [1976]: 546), Machovec (1995: 132). L.R.P. (1894: 378) recalls in general that "much ... of his treatise is devoted to showing its (of competition) limitations in practice".

the idea is attributed to J.S. Mill, as to Smith, that “concentration will inevitably lead to some ‘contrivance to raise prices’ or some form of ‘combination among dealers’”²⁷. Cairnes (1874) is described as interested specifically in cases of monopoly power within his “non-competing groups”²⁸.

To sum up, and in the light of the previous distinction, we can state that the classicals had singled out a series of causes from which they believed monopoly power for firms could derive: some of them (agreements, limited knowledge) are to be considered strategies *to compete*²⁹, others (imperfect factor mobility, inelastic input supply, custom) were seen as real obstacles to the competitive process³⁰; the latter were however seen as temporary, but to this we shall be returning. On the importance of the number of firms for competition, as we have seen, there was no agreement.

2.3.2. Marginalist and Neoclassical Competition

We now seek the sources of monopoly power in the literature on competition in marginalist and neoclassical thought³¹. As we shall see, in that age the foundations are laid of the conception of competition

²⁷ Bradley (2009).

²⁸ Stigler (1957: 3-4), L.R.P (1987: 378), Backhouse (1990: 61). We should remember that Cairnes distinguished between commercial competition (within the industry) and industrial (between industries). We just want to point out, without suggesting any continuity, that if the two kinds of competition take place without friction, they generate the two essential results of perfect competition: single price (from the first) and normal profits (from the second). We are aware that Cairnes was interested in competitive behavior, whereas here we are highlighting the end state; nevertheless, in the light of later developments the relevance of the distinction he made is striking.

²⁹ Hart (2001) recalls for example that for the classicals “technological change was the natural result of economic competition” (3).

³⁰ We do not share the idea that in the classicals’ thinking the non-legal obstacles to competition were entirely absent. For example Hovenkamp (1989b) is being reductive when he sees in the classicals “the absence of any notion of barrier to entry” ([1991]: 148).

³¹ In the distinction between these two categories we are referring to the idea that the construction of the neoclassical paradigm was above all the work of the generation after the marginalists (Screpanti and Zamagni 1989: 6).

seen as a specific market structure rather than as an activity, without moreover abandoning the classical idea of competition as behavior that we have just examined. Cournot (1838), as we know, paid no attention to the conditions of entry, yet in the literature on competition he is cited for one aspect that also interests us here: his theory in fact establishes that if the firms are few, they have market power³². Jevons (1871) is remembered for his “law of indifference”³³ and for his idea of perfect market³⁴. Edgeworth (1881) is considered the first to list certain conditions without which individuals cannot compete or, in his terms, “recontract”: free communication³⁵, divisibility of goods³⁶, large number of sellers³⁷. Bertrand (1883) is mentioned for price competition³⁸, which makes the number of firms in the market irrelevant. Marshall (1890a, 1890b) is described as one who is confident that the “race” of competition can take place, on condition there is sufficient knowledge and absence of agreements³⁹. Hadley (1896) is cited for the role played by custom⁴⁰, as in J.S. Mill, but above all for finding natural monopolies⁴¹. J.B. Clark (1887, 1901, 1904) is remembered for having held that firms operating in the market were

³² We should remember also that it is held Cournot really believed that competition existed in most real markets (Stigler 1957: 5-6 e 1987: 533; Bradley 2009: 5).

³³ According to this law in a market there cannot be two different prices for the same good (Backhouse 1990: 66-67).

³⁴ A perfect market for Jevons requires perfect knowledge and a “perfectly free” competition not better defined (Stigler 1957: 6).

³⁵ Backhouse (1990: 77).

³⁶ Stigler (1957: 7 and 1987: 534).

³⁷ Backhouse (1990: 78).

³⁸ Backhouse (1990: 69).

³⁹ Stigler (1957: 9). In general it is held that Marshall was aware that perfect competition requires small firms and given prices, but that he didn’t push his argument as far as that formulation (Peterson 1957: 72; Corley 1990: 84). In a marvelous passage Schumpeter gives an explanation for this, writing that Marshall “was bent on salvaging every bit of real life he could possibly leave in ... he did not attempt to beat out the logic of competition to its thinnest leaf” (1954 [1976]: 974).

⁴⁰ Morgan (1993: 573).

⁴¹ Morgan (1993: 593-594).

capable of preventing entry⁴², and even of eliminating potential competition⁴³; he is also cited (J.B. Clark 1899) for having added to those of Edgeworth two more conditions: the *instantaneous* mobility of resources and the identification of competition with stationary equilibrium⁴⁴. Wicksell (1901) and Moore (1906) are mentioned for having provided new lists of necessary conditions for competition⁴⁵. Wicksell (1901) is also remembered for having traced the causes of monopoly in large overhead costs, in joint supply and in location⁴⁶, while H.C. Adams (1918) is considered among those who believed that firm size was the cause of market power⁴⁷. Finally, having made the greatest effort to set down the conditions for *perfect* competition is down to Knight (1921b)⁴⁸, and it should also be noted that he didn't believe in it⁴⁹. It was precisely Knight who prepared the way for the reaction in the Thirties against the theory of perfectly competitive markets⁵⁰ and ironically it was Chamberlin⁵¹ and Robinson⁵² who

⁴² Morgan (1993: 586-587).

⁴³ Morgan (1993): "Successful combinations, by fixing prices and production, could limit both real and potential competition" (587).

⁴⁴ Stigler (1957: 11).

⁴⁵ For Wicksell "There must be a uniform product, firms must be small in size and there must be constant returns to scale" (Backhouse 1990: 70). Moore lists five conditions, but "His first two items state the conditions of price uniformity and profit maximization. Conditions III, IV and V are stated in such a way as to create doubts about the distinction between premise and consequence" (Dennis 1977: 272); see also Stigler (1957: 9).

⁴⁶ Backhouse (1990: 70-71).

⁴⁷ DiLorenzo and High (1988: 429).

⁴⁸ Stigler (1957: 11) and Machovec (1995: 163-164).

⁴⁹ Peterson (1957: 65) for example cites J.B. Clark (1899): "a static state ... is imaginary". See also Stigler (1957: 11), Dennis (1977: 273-275).

⁵⁰ Stigler (1957): "It was the meticulous discussion in this work that did most to drive home to economists generally the austere nature of the rigorously defined concept and so prepared the way for the widespread reaction against it in the 1930's" (11); Also Dennis (1977) writes: "Knight highlighted the severely abstract character of perfect competition in such a way that led other theorists to hunt for more plausibly realistic models of market behavior" (270).

⁵¹ Peterson (1957: 76).

⁵² Dennis (1977) writes: "Chamberlin [and] Robinson had to specify more precisely what the model of perfect competition itself entailed, so that a proper contrast could

perfected definitively its static notion⁵³. The “**principle of excluded strategy**” having prevailed⁵⁴, it is said that after this age every action undertaken to compete was considered proof of monopoly power⁵⁵; we shall be returning to this affirmation.

As can be seen, for the age examined here as well as for the classical age, we can divide the causes of market power into two categories: on the one hand, those due to strategic behavior (agreements, limited knowledge, product non-homogeneity), on the other, those owing to external factors (technology, indivisibility, inelastic input supply, custom). We also note that, as the definition of the conditions for *perfect* competition gradually proceeds, it is denied that those conditions can be realized⁵⁶.

In the historiography of the notion of competition there is therefore interesting material for a history of the causes of market power. Further on we shall be looking much closer at the consequences these ideas have had for our research; for the moment we shall restrict ourselves to noticing, together with most of the relevant literature, that in this period there were several concepts of competition, and they co-existed side by side.

be drawn with the newer models” (270-271) and Machovec (1995) states “the Chamberlin/Robinson model provided the capstone for the triumph of equilibrium theory” (181).

⁵³ Also Blaug (1997) argues that the perfecting of the theory of perfect competition occurred in the Thirties (66-67), and adds: “Robinson and Chamberlin ... created the theory of perfect competition in the course of inventing imperfect and monopolistic competition theory” (68).

⁵⁴ “The Principle of Excluded Strategy” is the colorful expression Schumpeter uses (1954 [1976]: 972) to indicate *perfect* competition.

⁵⁵ Machovec (1995): “as the neoclassical conceptions of competition and monopoly began to take hold, nearly every traditional means of competing came to be interpreted as unlawful” (180). Blaug (1997): “every act of competition ... was now taken as evidence of some degree of monopoly power, and hence a departure from perfect competition” (68).

⁵⁶ Certainly this is true for the short run, as Morgan notes (1993): “imperfections in the market *delay* the effects of the working of the static laws” (589, italics added).

2.4. *The History of the Notion of Entry Barriers*

We continue to seek explanations of monopoly power, this time examining the field of industrial economics, and in particular the way that discipline has answered the question: which factors generate situations in which firms have market power, i.e. in which they are able to set their prices⁵⁷? We shall examine three periods, beginning with the more recent.

2.4.1. From Bain to the present day

Starting from the contribution of Joe Bain (1956) at Harvard, industrial economics provided an answer to our question: the causes of firms' market power are entry barriers; in other words the notion of entry barrier was used to explain the existence of monopoly power. So we found the category our research was looking for in economic theory: entry barriers explain the presence of market power. We still had to ask ourselves if the history of this category had already been written; in actual fact, a history focused on the specific subject of the notion of entry barriers already exists⁵⁸, and to put it briefly, is this: everything starts from Bain, who found entry barriers in economies of scale, in product differentiation or in the absolute cost advantages for established firms; it should be noted that for Bain entry barriers allow incumbents to "persistently raise their prices above a competitive level without attracting new firms to enter the industry" (Bain 1956: 3), so for Bain, profits above the normal level were signs of the existence of

⁵⁷ For those who argue that monopoly power is generated exclusively by legal factors these question makes no sense. For example, certain exponents of the Chicago School state that "firms cannot in general obtain or enhance monopoly power by unilateral action" (Posner 1979: 928); the neo-Austrian School, basing itself on different methodological foundations, argues that: "Monopoly power ... is always associated with legal, third-party restraints on either business rivalry or cooperation, not with strictly free-market activity" (Armentano 1999: 18).

⁵⁸ On entry barriers in the history of economic thought starting from Bain there are the very recent works of Keppler (2008) and Rosado Cubero (2008). However, the main information set down here can be drawn from textbooks of industrial economics.

entry barriers⁵⁹. For our own research it is important to emphasize that independently of Bain, and in the same period, Sylos Labini (1957) studied the relation between the number of firms and market power, also using the concept of entry barriers⁶⁰.

Stigler (1968), from Chicago, attacking Bain's definition, defined entry barriers as a cost advantage of the firm already in the industry compared to those seeking to enter, thus detaching them from above-normal profits. With the two different definitions of Bain and Stigler, a controversy began⁶¹ on which concrete situations act as entry barriers⁶². From Salop (1979) onwards non-legal entry barriers were divided up into innocent and strategic, the former of a structural type, and hence exogenous, the latter activated by existing firms, and hence endogenous⁶³. Basing itself on this theoretical category, industrial economics defined the causes of market power first according to the structure-conduct-performance approach⁶⁴, and then, starting from the Eighties, to the "new industrial economics". For the former, monopoly power is a function of the degree of concentration of

⁵⁹ In this context it is worth remembering the title of an article of his "The Profit Rate as Measure of Monopoly Power" (Bain 1941).

⁶⁰ Sylos Labini (1957) also uses the term "barriers", for example: "In concentrated oligopoly, technology creates *external* barriers between each group of firms and its potential competitors" ([1962]: 54-55 author's italics).

⁶¹ See for example McAfee *et al.* (2004), Carlton (2004), Schmalensee (2004).

⁶² As well as on the usefulness of the concept. Some exponents of the Chicago School wholly rejected the concept of entry barrier, e.g. Bork (1978: ch. 16), Demsetz (1982) and Posner (1979: 929); the latter calls entry barriers "colorful characterizations". Even more critical were the representatives of the Neo-Austrian School, for whom "most of these alleged barriers have proven to be economies and efficiencies that leading firms have earned in the market-place" (Armentano 1999: 13).

⁶³ "I have assembled ... some 14 sources of entry barriers which the literature has identified. They derive both from "exogenous" causes (that is, basic conditions such as technology) and "endogenous" conditions (that is, voluntary actions taken by the incumbent firms so as to make entry harder)" Shepherd (1995: 303).

⁶⁴ Some (for example Shepherd 2007: 209) hold that we owe this approach to Edward Mason, and thus to an age prior to the one under consideration in this section; we shall deal with this in the next section.

an industry⁶⁵, and depends on the existence of exogenous entry barriers⁶⁶; for the latter, it is not a function of the concentration, but of the degree of potential competition⁶⁷, and depends on endogenous and exogenous entry barriers. It is useful to notice that these latter are strategic barriers, so they imply competitive behavior by the firm, akin to the activities *to compete* found by the classicals and the marginalists of whom we spoke in the section on competition.

2.4.2. From the Thirties to the Fifties

All this is widely known, but less well known is the way in which monopoly power was explained before the introduction of the category of entry barrier; here we examine the period from the Thirties to Bain (1956). The existing historiography on this period⁶⁸, which is not devoted to the specific subject of the sources of market power, traced a good many birthplaces of industrial economics. Among them we cite only the three that seem to us the most significant: the first is in the United Kingdom with J. Robinson (1933), the other two in the United States, one at Harvard with E. Chamberlin (1933) and E.S. Mason (1939), the other at Chicago with H. Simons (1934). The interrelations between the protagonists of these three groups over the two decades would deserve an entire study to themselves; here we just try to extrapolate the answers they provided to the questions that

⁶⁵ The degree of concentration provides indications on size (on market share) of firms present in an industry. "An industry is concentrated if a small number of firms controls a large part of the economic activity of the entire sector" (Grillo and Silva 1989: 250).

⁶⁶ The Chicago School opposed this approach, in particular Demsetz, Posner and Friedman, for whom the greater size of firms is a sign of greater efficiency, not market power (Martin 2007: 39-43). The same position was taken by the Neo-Austrian School, for which "a firm's market share is not its market power, but a reflection of its overall efficiency" (Armentano 1999: 18).

⁶⁷ Hence for this approach the number and size of firms are not necessarily correlated to market power.

⁶⁸ Grillo and Silva (1989: 28-29), Corley (1990), Martin (2007: 27-29), De Jong and Shepherd (2007) and the literature cited there. Bain (1948), Galbraith (1948) and Keppler (1994a) focused specifically on the two decades examined in this section.

interest us, i.e.: are there impediments to entry? Do the firms already in an industry have monopoly power?

To begin with we can state that the controversies between these three schools do not seem to be about the specific subject of the determinants of market power: represented by some with a downward sloping demand curve facing the firm⁶⁹, monopoly power was attributed by everyone to obstacles to entry due both to exogenous causes and endogenous factors. It is well known that in the models of J. Robinson (1933) and Chamberlin (1933) the finite elasticity of demand curve faced by the firm is due to product differentiation; and it is likewise well known that this impediment to entry has both features, exogenous and endogenous⁷⁰. On the basis of this theory Chamberlin (1937) takes a complex position on free entry⁷¹, while J. Robinson⁷² illustrates other examples of limitations on entry, both endogenous⁷³ and exogenous⁷⁴. And if it is true that Mason seeks the

⁶⁹ It seems to us that the representation of market power through a downward sloping demand curve is already contained in the following words of Sraffa: "This necessity of reducing prices in order to sell a larger quantity of one's own product is only an aspect of the usual descending demand curve, with the difference that instead of concerning the whole of a commodity, whatever its origin, it relates only to the goods produced by a particular firm" (1926: 543). Both Chamberlin (1933) and Robinson (1933) use downward sloping demand curves for the individual firm, picking up the already well known demand curves for a monopoly. Mason (1939) rejects the analytical tools, including this representation, on the basis of their being empirically inapplicable.

⁷⁰ Shepherd (1991) in actual fact includes in the list of the factors that produce exogenous entry barriers "Product differentiation (occurring naturally among products)" (53) and in the one for endogenous entry barriers the "Selling expenses, including advertising (to increase the degree of product differentiation)" (54).

⁷¹ He states in fact that: "With respect to the *particular product* produced by any individual firm under monopolistic competition, there can be no 'freedom of entry' whatever... [but] there can be freedom of entry only in the sense of a freedom to produce substitutes; and in this sense freedom of entry is universal, since substitutes are entirely a matter of degree" (Chamberlin 1937: 567, author's italics).

⁷² In her famous book she does not go beyond the observation that "the problem of the conditions influencing the entry of new firms ... presents an interesting and largely unexplored field of inquiry" (Robinson 1933 [1969]: 92, fn. 1), but she does deal with it in Robinson (1934).

⁷³ She writes: "the existing firms may be so strong that they are able to fend off fresh competition by the threat of a price war. They may even resort to violence to prevent

cause of market power in technological factors⁷⁵, it is only because he believes that these and no others can be found empirically⁷⁶; on the other hand Simons states that firms' size is determined by exogenous factors, such as economies of scale, as well as by endogenous factors⁷⁷. It is not exactly surprising therefore, that Bain in 1956 considered it obvious that before him scale economies had been recognized by everyone, independently of the school they belonged to, as a deterrent to entry⁷⁸.

As for the relation between obstacles to entry and monopoly power, J. Robinson and Chamberlin both agree that firm's demand curve can be perfectly elastic also in the presence of obstacles to entry⁷⁹, whereas they disagree on the importance of the number of firms in determining profit levels⁸⁰. And, however ironical it may seem, Mason, the founder of the structure-behavior-performance approach, shows that: "Data on numbers ... tell us little regarding price and production policies" (1939: 64), whereas Simons (1936), the father of the Chicago School, attributes fundamental importance to

fresh rivals from appearing on the scene" (Robinson 1934: 107).

⁷⁴ For Robinson entry is difficult in those industries "which require unusual personal ability or special qualifications, such as power to command a large amount of capital for the initial investment" (Robinson 1934: 107).

⁷⁵ That he calls "market control" (Mason 1939: 61-62). See also Martin (2007: 37).

⁷⁶ He writes: "The objection is not that monopoly theory is incompatible with an analysis that takes [other] considerations into account but that its constructions are irrelevant to the real problems" (Mason 1939: 64). Bain also confirms this (1948 [1953]: 183).

⁷⁷ Martin (2007) argues that if on the one hand at Harvard it was believed that also economic forces influenced market structure (32), at Chicago up until the Fifties the role of technology was recognized as determining firms' size (38).

⁷⁸ He also points out that, whereas judgment on the large firms due to these economies in the UK was positive, the USA (Chicago included) was against concentration (Bain 1956: 59-61).

⁷⁹ The subject is barely mentioned in J. Robinson (1933); "The case of a small number of firms selling in a perfect market raises some difficulties, which are not here discussed" ([1969]: 86, fn.2), whereas in Robinson (1934: 104-111) and in Chamberlin (1937: 566) they state that the impediments to entry are entirely compatible with perfect competition, on condition that the demand curve for the firm is perfectly elastic.

⁸⁰ See J. Robinson (1934: 112-120) and Chamberlin's reply (1937: 566-568 and 569 fn. 1).

firms' size in the generation of market power (Martin 2007: 33). To sum up, and reporting at the same time the situation described by Scitovsky in 1950, all of them recognize the existence of both exogenous and endogenous impediments to entry⁸¹; nevertheless, not all believe that they generate monopoly power⁸².

It may be argued that this state of affairs was simply due to the fact that the problem of the relation between free entry and market power had not been fully focused on? This is what the three innovators in the theory of oligopoly think, when they complain about the confusion reigning in the literature on conditions of entry before they appeared on the scene⁸³. Martin's thesis (2007) nonetheless seems to us more convincing; according to this, the real opposition between schools of industrial economics only really began from the mid-Sixties⁸⁴, after the attacks of the second Chicago School⁸⁵ (which, again

⁸¹ It is worth remembering that, before Bain, Scitovsky (1950) showed a specific interest in the sources of market power, and in particular on the role of knowledge as entry barrier.

⁸² We recall other illustrious names of the age that did not think that large firms necessarily had market power, such as J.M. Clark (1940) (cit. in Machovec 1995: 293) and above all Schumpeter (1942) (cit. in Sylos Labini 1957 [1962]: 11).

⁸³ Bain (1956: vi) illustrates how on the subject of "condition of entry" received theory was "in extremely rudimentary form". Also Sylos Labini (1957) writes that "the analysis of the relationship between the process of concentration and market form is in a completely unsatisfactory state" ([1962]: 9). And Modigliani (1958: 216): "little systematic attention [had] been paid ... to the role of entry, that is, to the behavior of potential competitors". However, Modigliani alludes to a previous literature, though without specifying which, writing that the entry barriers that "Bain labels 'absolute cost advantages' ... have already been extensively analyzed and understood in the received body of theory" and that the barrier "resulting from the inability of potential competitors to produce a commodity that is a perfect substitute for the product of existing firms - is again one that has received considerable attention in the past" (Modigliani 1958: 231). It will be remembered that the literature following on from the Fifties has always pointed to this period as the point of departure for the thinking on the causes of market power.

⁸⁴ This seems to us convincing despite the undeniable divergences between imperfect and monopolistic competition of which White (1936) speaks.

⁸⁵ We are referring to the above cited diatribe on the definition of entry barriers and to the attack on the structure-conduct-performance approach by Stigler, Friedman, Coase, Posner, etc.

according to Martin, the game theory approach finally proved wrong).

2.4.3. Before the Thirties

If from the historiography on industrial economics indirect references to the causes of market power can be drawn, we cannot avail ourselves of most of it for the years prior to the Thirties, which is considered the pre-history of this discipline. But since it is obvious that the ideas of the Thirties did not come from nowhere, we found some interesting references in those few works that go further back⁸⁶. Despite the great dissatisfaction often expressed about the state of the ideas formulated up until the Thirties on the subject of the causes of monopoly power⁸⁷, we have managed to draw up a list of names who are remembered on this.

In the first place the Scholastics, for whom the causes of monopoly were: “engrossing, forestalling, regrating, illicit agreements, secret pacts, conspiracies, bidders’ rings”⁸⁸; there follows that of the Dutchman Graswinkel (1651: 158) who argues: “monopoly is not to be feared when there are many, but few”⁸⁹ and of Cantillon (1755) who on the contrary argues that the number of competitors is not essential for rivalry to occur⁹⁰. Passing on to the classicals, Smith (1776) is cited by this historiography, too, as by that on competition, both for having shown that a small number of entrepreneurs facilitates coalitions⁹¹, and for having highlighted their propensity to come to agreements among themselves⁹²; he also identified situations where supply is

⁸⁶ These works will be cited in the course of this section, the most important being those of De Jong and Shepherd (2007).

⁸⁷ Sylos Labini (1957) explains for example that, concerning “the market power of very large industrial concerns ... apart from the rather elementary observations of Smith and Marx, we are still in need of a really satisfactory theoretical analysis” ([1962]: 11).

⁸⁸ De Jong (2007a : 11, table 2.1).

⁸⁹ De Jong (2007a : 22).

⁹⁰ De Jong (2007a : 19).

⁹¹ Smith (1776, I. 8. 12 and II. 5. 7) cit. in Sylos Labini (1957 [1962]: 8).

⁹² Smith (1776, I. 8. 13, but above all I. 10. 82 and I. 10. 85); he nevertheless believes such coalitions to be unstable. Cit. in Stigler (1982: 1).

persistently scarce compared to demand⁹³. We have already recalled the role attributed by J.S. Mill (1848) to “custom” as a restraint on competition⁹⁴; he is also cited for “the baneful effect of small number on the vigor of competition”⁹⁵ and for his consideration of the influence of economies of scale⁹⁶. There is also Marx (1867), who is cited for the idea that the conspicuous “minimum capital necessary to start up production at sufficiently low costs ... creates a ‘natural’ obstacle to competition”⁹⁷.

As far as marginalist thinking is concerned, Dupuit (1852-53a 1852-53b) is remembered for having found some deterrents to entry in the transport sector⁹⁸, C. Menger (1871) for having considered monopoly an outcome of the limited size of markets⁹⁹ and H.C. Adams (1887) for the effects on market structure of increasing returns to scale¹⁰⁰. Marshall deserves a place to himself: on the specific subject of monopoly power, on the one hand his anthropomorphic theory of the growth of the firm, and the metaphor of the trees of the forest are considered as unsuitable to deal with the phenomenon of the big industrial concentrations¹⁰¹; in addition, it is stated that his conception of competition left no room for long run worries¹⁰². On the other hand

⁹³ “Some natural productions require such a singularity of soil and situation, that all the land in a great country ... may not be sufficient to supply the effectual demand” Smith (1776, I. 7. 24) cit. in Mosca (2008: 322). On natural causes see also (I. 7. 20). In Smith there are other causes of market power that would require a separate study, for example imperfect information on prices, which he considers a temporary cause (I. 7. 21), and on technologies (I. 7. 22).

⁹⁴ J.S. Mill (1848 II. IV. 3) cit. in Sylos Labini (1957 [1962]: 14).

⁹⁵ Stigler (1982: 2) and Mosca (2008: 333 and 337).

⁹⁶ Stigler (1982: 3).

⁹⁷ Marx (1867, I, XXIII, 2) cit. in Sylos Labini (1957 [1962]: 9).

⁹⁸ In addition to the works cited in the introduction, see Ekelund and Hébert (1999: 323).

⁹⁹ Niehans (1990: 279), De Jong (2007b: 35).

¹⁰⁰ Hovenkamp (1989a: 123); Trebing (2007: 173- 174).

¹⁰¹ For example Stigler (1950): “An anthropomorphic theory of the growth of the firm ... scarcely fits our modern giants” (23) and Sylos Labini: “According to Marshall ... the trees of the forest must have been saplings once” (1957 [1962]: 169).

¹⁰² According to Chamberlin for Marshall the phenomenon of the “industries in which

he is cited on finding the causes of the slope of the firm's demand curve¹⁰³, as also for the economies of scale due to advertising expenditure and for the strategic barriers to entry¹⁰⁴. We continue with Hadley (1896), remembered for having focused on the importance of fixed costs¹⁰⁵ and on the effects of the time necessary for new competitors to enter the market¹⁰⁶, and with Collier (1900) for having understood the strategic role of excess capacity¹⁰⁷. Ely (1900) is remembered for having grasped the monopolistic nature of trademarks¹⁰⁸, for having stated that the existence of substitutes reduces market power¹⁰⁹ and that economies of scale are a deterrent to entry¹¹⁰. J.B. Clark (1901, 1912, 1914) is remembered for the role he recognizes to predatory practices and, with opposite effects on market power, to potential competition¹¹¹. Chamberlin then cites Taussig (1911)¹¹² again

each firm is likely to be confined more or less to its own particular market" is exclusively "short time" (1933 [1962]: 69-70). Similarly Sylos Labini (1957) remembers that for Marshall the big industrial enterprises may not have monopoly power and cites him: "the last years of the nineteenth century and the first years of this have shown that even in these cases competition has a much greater force" ([1962]: 12). Utton (2007) recalls that: "Marshall continually emphasized the fragile and conditional nature of ... monopolies. They are perpetually under threat from the vigorous new entrant, the alternative source of supply and the substitute product or material" (113).

¹⁰³ Joan Robinson writes, citing Marshall: "Its elasticity will depend upon many factors, of which the chief are the number of other firms selling the same commodity and the degree to which substitution is possible, from the point of view of buyers, between the output of other firms and the output of the firm in question. If there are few or no other firms producing closely similar commodities, the distribution of wealth among buyers, the conditions of supply of rival commodities, the conditions of supply of jointly-demanded commodities, and all the innumerable factors which affect the demand for any one commodity will influence the demand curve for the individual producer" (1933 [1969]: 50). Sylos Labini (1957) comments on this that, according to Marshall, with the passing of time "the demand schedule becomes more rigid" ([1962]: 51).

¹⁰⁴ Utton (2007: 113-114).

¹⁰⁵ Hovenkamp (1989a: 125).

¹⁰⁶ Hovenkamp (1989a: 151).

¹⁰⁷ Hovenkamp (1989a: 147).

¹⁰⁸ Ely (1900: 43), cit. in Chamberlin (1933 [1962]: 59-60).

¹⁰⁹ Ely (1900: 35), cit. in Chamberlin (1933 [1962]: 66).

¹¹⁰ Hovenkamp (1989a: 147).

¹¹¹ Stigler (1982: 4), Hovenkamp (1989a: 147-148), Brown (2007: 175-176).

for the substitutes and Fisher (1912) for the attention he paid “to the idea of a separate market for each seller”¹¹³. In addition he mentions Knight (1921a, 1921b) for the statement that “every business is a partial monopoly”¹¹⁴, for the analysis of the effects of “trade-marks, trade names, advertising slogans ... reputations”¹¹⁵, differentiated products¹¹⁶, and for having *postulated* that in competition small firms must be more efficient than large ones¹¹⁷. Chamberlin also cites J.M. Clark (1923) for his emphasis on the number of firms¹¹⁸, again on product differentiation¹¹⁹ and on excess capacity¹²⁰. Finally, J. Robinson recalls Sraffa (1926) for his saying that “the entry of new firms into an imperfect market must necessarily be difficult”¹²¹. Chamberlin mentions Sraffa for the role of increasing returns¹²² and cites Hotelling (1929) both for the “circles of customers [who] make every entrepreneur a monopolist within a limited class and region”, and for the statement that at the same time “there is no monopoly which is not confined to a limited class or region”¹²³.

As can be seen the list is not a short one and the causes of monopoly power are all there, exogenous and endogenous: strategies, economies of scale, absolute cost advantages, product differentiation, conditions of demand (elasticity and market size); there is also the idea

¹¹² Taussig (1911, 3rd rev. ed., I: 209 and II: 114) cit. in Chamberlin (1933 [1962]: 66).

¹¹³ Fisher (1912: 323) cit. in Chamberlin (1933 [1962]: 69).

¹¹⁴ Knight (1921b: 193 [1960]: 184 fn. 1), cit. in Chamberlin (1933 [1962]: 5)

¹¹⁵ Knight (1921b: 185 [1960]: 176 fn. 1), cit. in Chamberlin (1933 [1962]: 60).

¹¹⁶ Knight (1921a: 332), cit. in Chamberlin (1933 [1962]: 70).

¹¹⁷ Knight (1921b: 98 [1960]: 93), cit. in Chamberlin (1933 [1962]: 245).

¹¹⁸ J.M.Clark (1923: 417), cit. in Chamberlin (1933 [1962]: 49).

¹¹⁹ J.M.Clark (1923: 418), cit. in Chamberlin (1933 [1962]: 70).

¹²⁰ J.M.Clark (1923: 437-439), cit. in Chamberlin (1933 [1962]: 109); it is also cit. in Hovenkamp (1989a: 148).

¹²¹ J. Robinson (1934 : 105).

¹²² Chamberlin (1933 [1962] : 5). Sraffa’s article of 1926 is cited by all the literature. In particular it seems to us of interest to recall that Sraffa (1926) assimilates to a monopoly the firm that spends on advertising, thanks to the “protection of its own barrier” (545).

¹²³ Hotelling (1929: 44) cit. in Chamberlin (1933 [1962]: 6).

that the number of firms may not affect market power or even that the entry barriers in the long run may not be there at all. But the things that the examined literature says about the authors of the past concerning the uncovering of the causes of monopoly power are only vague and random fragments, lacking a background of systematic study or interpretation.

3. Where to search

Despite the wealth of suggestions we have highlighted so far, the historiography on the period prior to the Thirties has never focused on the subject of the causes of market power, thereby leaving a gap that requires filling. In the light of the review we have just carried out of the literature on competition on the one hand and on the pre-history of industrial economics on the other, we may well ask ourselves at this point in which direction we should be concentrating our research.

3.1. *Why not begin with the Classics?*

As we have seen, the information we have gathered from the secondary literature tells us that the causes found by the classicals were in part endogenous, due to strategies carried out in order to compete, and in part exogenous, the fruit of obstacles independent of the firms intentions. These obstacles, we have argued, were held to be mainly short run¹²⁴; in actual fact the literature insistently recalls that in classical thinking restraints on competition had no importance in the long run¹²⁵. The monopoly power resulting from competitive

¹²⁴ The term “mainly” refers to the fact that, for example for Smith, certain factors of production could be scarce “forever” (Smith 1776: I.7.24); J.S. Mill also believed that certain obstacles would last in the long run: for example custom, and the combinations (Schumpeter 1954 [1976]: 546), and also natural monopolies (Mosca 2008).

¹²⁵ Hovenkamp (1989a): “The analysis of classical political economists generally assumed that entry into markets was easy and could be accomplished *very quickly*” (144, italics ours). Machovec (1995): “From a classical view ... harm ensued only if institutions existed to inhibit the process of competition, independent of the presence of *transitory* monopoly profits due to $P > MC$ ” (17, our italics).

strategies was hence considered by the classicals to be always present, but continually threatened by competition, both actual and potential, except of course in the case of temporary exogenous obstacles¹²⁶. We also need to add that such a conception was valid for the classicals in theory as well as in reality¹²⁷, which means that competition was considered a very widespread phenomenon, on condition the market was free from legal restraints¹²⁸. This optimism is further confirmed by the fact that in their writings the specific subject of monopoly takes up very little room¹²⁹. If the market power that the firms obtained through strategic behavior did not worry the classicals because it was perpetually threatened, and if that due to exogenous obstacles did not go beyond the horizon of a short run that they judged unimportant, then it is clear that a detailed coherent examination of the causes of monopoly power cannot be found in their thinking.

3.2. *Why begin with the age of the marginalists?*

The reasons we have just illustrated direct us towards the age of the marginalists, and this is what the secondary literature does on subjects akin to ours¹³⁰. But why this particular age?

¹²⁶ Hovenkamp (1989a): "Classicism's faith that potential competition would discipline incipient monopolists was based largely on its concepts of market entry barriers. Classical political economy recognized only government restrictions as barriers to competitive market entry" (149). It would be correct to add: in the long run.

¹²⁷ Schumpeter (1954) "the 'classics' [were] firmly convinced that the competitive case was the obvious thing" ([1976]: 545). This conviction holds true to the extent it is believed that the impediments were temporary or of small account.

¹²⁸ Backhouse (1990) notes that Smith on many occasions uses the term "liberty" to indicate competition, and defines it precisely "in terms of the absence of restraints" (60). It is interesting to note that Hovenkamp (1989b) indicates among the restrictions recognized by law also "a privately created restriction on entry, either by a contract including the restricted person as a willing participant, or else by a combination directed at other people as target" ([1991]: 148).

¹²⁹ Stigler (1987: 532): "Demsetz has counted only one page in 90 devoted to monopoly in *The Wealth of Nations* and only one in 500 in Mill's *Principles of Political Economy*. Indeed the world 'monopoly' was usually restricted to grants by sovereign".

¹³⁰ For example De Jong and Shepherd write about industrial economics: "There was major pioneering from the 1870s on" (2007: xxiii). Hovenkamp (1989a), on dealing

We can certainly find an answer in economic history. New phenomena like trusts, cartels, mergers, the vertical integration of firms, public utilities, and the railways¹³¹, raised new problems. Compared to the world of the classicals the provisional character of the obstacles to competition no longer seemed to apply¹³²; in actual fact the short run in some industries seemed to be very long, and in certain cases to enter a market turned out to be very difficult even in the absence of legal barriers¹³³. Faced with these new phenomena economists tried to understand why in certain markets firms continued to be few, if they should be worried about their size, or if this was on the contrary an advantage¹³⁴, or whether one could count on their reciprocal rivalry¹³⁵. These questions gave rise to a quantity of studies on the subject of monopoly power that was obviously without precedent¹³⁶, as the review of the literature already provided has shown.

From a methodological perspective, how were these problems dealt with? It is well known that the years at the turn of the century were a kind of crossroads for a variety of different positions, in which the already bitter controversies between old classical thought and the new ideas of the historical school also had to face the marginalist paradigm that was making headway. The historiography on the

with the debates on the subject of antitrust focuses on the “waning years of the nineteenth century” (105) and also Morgan (1993), dealing with competition, concentrates on this period.

¹³¹ These subjects are dealt with in Hovenkamp (1989a).

¹³² Hovenkamp (1989a) writes that in this age doubts began to be voiced about the classical idea that the savings of big firms were transferred on to consumers, and also that potential competition was always at work (144 ff.)

¹³³ Hovenkamp (1989a: 150-151).

¹³⁴ Hovenkamp (1989a) reports the various positions on the controversial hypothesis of “ruinous competition” (136-137).

¹³⁵ The latter is the idea that DiLorenzo and High (1988) attribute to the economists of the marginalist age.

¹³⁶ Hart (2001) argues that the various positions of the economists reflected the popular division between supporters and opponents of the trusts due to the effect of these organizations on their business (3).

subject of industrial economics shows that for a long time in the thought of this period classical theory co-existed with historical analyses based on the examination of cases and on statistics, as it did with marginalist ideas that were slowly gaining ground¹³⁷; the historians of competition also point out this co-existence¹³⁸. **So we do not find a pure neoclassical theory in this period¹³⁹, but rather methodological contaminations** that gave rise to a great wealth of ideas, as has already been shown through our account in the previous sectors.

One significant aspect which helps to explain why it is worthwhile concentrating our analysis on the age of marginalism concerns the history of the analytical tools used by economists. We recall that Cournot, Dupuit, Ellet, Von Thünen and others¹⁴⁰ had used mathematical tools, leaving their methods and their results to those who came after them: demand functions, cost curves, and equilibrium conditions were available at the end of the century for use in economic thinking. Some of the theoretical developments on the causes of monopoly power also came about through the logical necessity imposed by the analytical tools employed¹⁴¹.

¹³⁷ Hovenkamp (1989a): "The earliest economic studies of the trust problem were dominated by broad, historically based inquiries" (116), while Schumpeter notes, concerning the marginalists, that: "To a surprising extent they continued to look upon the competitive case as [in the preceding period, but] they complemented this vision by an analysis that was far superior to that of the 'classics'" (1954 [1976]: 892).

¹³⁸ "For three decades prior to 1920 a bifurcation period existed" (Machovec 1995: 97). The many different positions on the subject of competition present in this period in the USA is the subject of Morgan (1993).

¹³⁹ The construction of the neo-classical paradigm was a slow process, and the "purification" of economic theory in the sense of reductionism occurred still more gradually. On reductionism in economics see Zamagni (2000).

¹⁴⁰ On which see Niehans (1990) and Ekelund and Hébert (1999).

¹⁴¹ De Jong and Shepherd write that in this period in industrial economics "basic concepts were invented as the new 'neo-classical' microeconomic theory rapidly emerged" (2007: xix). If it is true that the formalization of the notion of perfect competition occurred only with Chamberlin and Robinson (Dennis 1977: 270 ff), and that beforehand all rigor was applied to the listing of its conditions, nonetheless mathematical tools *were* important precisely for the finding of these conditions, which

All this leads us to conclude that focus on the problem of monopoly and its causes increased a very great deal precisely in this age for two different kinds of reason. The first, linked to method, is that with the emergence of the notion of *perfect* competition, all strategic behavior of firms became a sign of monopoly, and as such caused worry. The second, on the other hand, concerns the new economic situation in which market power, whether generated by strategies or obstacles, showed itself to be long lasting and hence once again, though for other reasons, worrying. The difference between the two cases, however, should not be lost sight of: **in the first case, as we have already seen, the identification of monopoly power was due to a change only in the theoretical model¹⁴², while in the second it was to be imputed to new circumstances in the real world.**

3.3. *Why the Italian marginalists?*

When speaking of the marginalist age it is of course essential to quote Schumpeter: "The most benevolent observer could not have paid any compliments to Italian economics in the early 1870's; the most malevolent observer could not have denied that it was second to none by 1914"¹⁴³. Having selected this age in the previous section as the most suitable one for our study, we certainly cannot neglect an examination of the economic theory whose primacy Schumpeter recognizes in such glowing terms!¹⁴⁴

There are, however, other good reasons for studying this Italian thought, and that concern the specific subject of this work: in Italy in the marginalist age a great many studies were written on the subject of

is the part of the history that interests us.

¹⁴² This is Edgeworth's opinion, according to Machovec (1995): "Edgeworth's dissatisfaction with the concept of zero profit ... was rooted in his realization that the new package of semantics *and ideas* attending the model of perfect competition were affecting how leading economists were reasoning about the market process" (288 author's italics).

¹⁴³ Schumpeter (1954 [1976]: 855).

¹⁴⁴ Johnson (1956) also defines this age the "golden age of Italian economics" (506).

monopoly power¹⁴⁵, **which was by no means specific to the USA as is sometimes held**¹⁴⁶. Many Italian economists dealt with it¹⁴⁷, in part as a reflection of American and European realities¹⁴⁸, but also because of the industrial situation in Italy and the microeconomic policies followed, or not followed, by Italian governments in the decades at the turn of the century. It was the condition of Italian industry that encouraged thinking on the subject of monopoly power, characterized by “participations intersecting and in succession; holdings and groups, trade union agreements, also secret ones, interlocking directories¹⁴⁹, with at least some big linkers; interlocking relations between industry and the big banks; concentration of activities in the industrial triangle; districts”¹⁵⁰. The massive intervention by the government in the life of firms also provoked commentary from economists, thus revealing their idea on market power in the absence of this intervention¹⁵¹.

¹⁴⁵ Let us cite the earliest: L. Cossa (1877), Boccardo (1882), E. Cossa (1888, 1901), Dalla Volta (1888, 1889-90, 1900, 1901, 1902) Supino (1893, 1902).

¹⁴⁶ Morgan (1993) seems to support it, and adds that both in the UK and in Germany the problem of competition between big firms was not raised (564, fn. 4), but De Jong, for example, recalls the German book of 1883, *Die Kartelle* by Kleinwächter (De Jong 2007c: 62-63). In this sense also Gerber (1998).

¹⁴⁷ See the historical studies of Mazzocchi (1965), Avagliano (1974), Parisi (1992), Bientinesi (2003) and Augello e Guidi (2009). There are also works on the history of industrial economics in Italy: Bianchi (2007), Marchionatti and Silva (1992), Grillo and Silva (1989: 35-37), who, however, are referring to more recent periods to the ones dealt with here.

¹⁴⁸ See for example the case of Riccardo Dalla Volta, examined by Augello and Guidi (2009).

¹⁴⁹ The sharing of administrators that allows big companies to form a network of connections.

¹⁵⁰ Ciocca (2008: 159). Economic historians in general believe that the “phenomenon of industrial concentration in the sectors of higher economies of scale emerges in Italy at the start of the twentieth century” (Amatori and Colli, 1999: 117).

¹⁵¹ There was low competitiveness in the country in the years beginning with the victory of the Left (1876), due among other things to the collusion between the state and big firms, whereas in the age of Giolitti (1900-1913) there was “an intervention of the state against the dominant positions in crucial sectors and markets: telephones, maritime services, insurance, railways” (Ciocca 2008: 44). And furthermore: Giolitti opposed to private monopolies “the power of the state, public monopoly. He tried to counter contestability, by other private firms. He succeeded with the railways and

To these reasons taken from economic history, others can be added concerning the derivation of the ideas. The fact that the father of the theory of imperfect competition was Italian (Sraffa), as were two of the three founders of the new theory of oligopoly based on the notion of entry barriers (Sylos Labini and Modigliani) **suggests that their ideas could have an Italian derivation**. Also the wholly Italian history of the working out of U shaped average cost curves, an instrument of great importance for our subject, encourages us to continue exploring in this direction¹⁵². Moreover, the role the Italian marginalists played in the definition of the notion of natural monopoly also offers good prospects for research on the subject of monopoly power in general¹⁵³.

We conclude our line of argument by recalling, together with Modigliani, that the possibility of reading Italians in their own original language “is open only to the ‘happy few’” (1958: 216); we therefore think it is a duty and a privilege of Italians to carry out historical work on their primary sources.

3.3.1. The economists considered

In this work I deal especially with four Italian marginalists: Vilfredo Pareto, Maffeo Pantaleoni, Antonio De Viti de Marco and Enrico Barone. Three of them were contemporaries¹⁵⁴ and three, but not the same three, died a very short time one from another¹⁵⁵; their

telephones ... with the foundation of INA and the exclusive state rights to life insurance” (151). “There remained those collusive forms between firms, particularly between industrial firms and banks” (153). “In the European culture of the time the concept of antitrust did not exist ... but to oppose another firm to the firm that was sole agent of maritime services meant making that market a contestable one” (155).

¹⁵² Keppler and Lallement (2006). They are important in particular for the structure-conduct-performance approach, since they allow the identification of various market structures.

¹⁵³ Mosca (2008).

¹⁵⁴ Pantaleoni was born in 1857, De Viti de Marco in 1858 and Barone in 1859. Pareto, ten years before, in 1848.

¹⁵⁵ Pareto died in 1923, Barone in May 1924 and Pantaleoni in October of that year; De Viti de Marco lived for another two decades, dying in 1943.

biographers tell us of their deep personal ties¹⁵⁶: for example Pantaleoni converted Pareto and Barone to economics¹⁵⁷; we know about the brotherly friendship between De Viti de Marco and Pantaleoni; we have a wealth of correspondence between Pareto and Pantaleoni (De Rosa 1960) and between the latter and Barone (Magnani-Bellanca 1991)¹⁵⁸. And again, it is well known that three of them (Pantaleoni, De Viti de Marco and Pareto) edited together a memorable series of the *Giornale degli economisti*¹⁵⁹. It is precisely of our four economists that Einaudi (1934) speaks in his preface to the *First Principles* of De Viti de Marco as of those who gave: “such significant contributions to pure economic theory as to make their age rival ... the most glorious periods of the history of our science ” ([1953]: 13). The point to emphasize here is the importance, for our subject, of considering the group composed of these four figures as a single entity, since it was precisely their frequent intellectual contact and their reciprocal influence that affected the genesis and development of the ideas on market power.

It is by no means of secondary importance for the purposes of this study that they were all believers in free trade¹⁶⁰ and that all four were politically very active. They intervened in the political life of Italy,

¹⁵⁶ We provide here only one of the many testimonies of their interrelationship in this letter of Pareto's to Pantaleoni: “All the theories I have set out are simply the *germs of theories*. Economists like Barone who have knowledge, culture and intelligence, should be the ones to develop these theories, and seek *new truths* ” (De Rosa 1960: 455, Pareto's italics).

¹⁵⁷ Pareto was an engineer, Barone was in the military (Magnani 2003: 44-45, 72; Gentilucci 2006: 21).

¹⁵⁸ The subject of the Italian marginalists seen as a group in our opinion deserves a specific study.

¹⁵⁹ Until 1897 (Magnani 2003: 211). Ugo Mazzola was also one of the leading lights of the *Giornale degli economisti*. Barone took an active part in the project, as a reviewer (Gentilucci 2006: 28). Macchioro (1996: 10) speaks of a very violent *Methodenstreit* against all economic positivism led by the *Giornale degli Economisti*. We mention as an example of the primacy of the paper that Edgeworth's study of monopoly was published for the first time in Italian in the *Giornale degli Economisti* in 1897.

¹⁶⁰ Pantaleoni and Pareto in the course of their lives abandoned *laissez faire*.

proposing reforms both in the *Giornale degli economisti*, as well as through direct participation: two were members of parliament (De Viti de Marco and Pantaleoni), and two tried to get elected (Barone and Pareto). Their period of militancy lasted from between the middle of the Eighties to the coming of fascism¹⁶¹, right in the middle of the time in which, as we have explained, the issues concerning monopoly power were most relevant; and since all four were free trade economists, we can expect to find thinking on competition policies in their writings.

From the scientific point of view it is perhaps unnecessary to recall the reasons for their reputations, beginning with Pareto's everlasting fame due mainly to the concepts of Paretian optimum, of cardinal utility, to his law of income distribution, and in general to his contributions to Walras' theory of general economic equilibrium. Pantaleoni is considered the first economist to have applied the marginalist analysis to public finance¹⁶², in 1883; before Marshall he was the author of a textbook of pure economics, of writings on credit and other very innovative works¹⁶³. The fame of De Viti de Marco is mainly due to the foundation of *Scienza delle finanze* as a purely theoretical discipline, as well as his important contributions to the theory of banking, international economics and the history of economic thought¹⁶⁴. Finally, Barone is known mainly for his discovery of the theory of marginal productivity and for the socialist calculation debate.

If it was unnecessary to mention the thinking that made them immortal, we do have to point out that the secondary literature did make some references to them on subjects relevant to ours;

¹⁶¹ After that time the only survivor of the four, De Viti de Marco, stays silent for more than a decade, drafting his textbook on *Scienza delle finanze*.

¹⁶² Pantaleoni (1883) has priority over Emil Sax (1884); see Mosca (2006).

¹⁶³ The historiography on Pantaleoni is examined in Bini (1995). Augello and Michelini (1997).

¹⁶⁴ On De Viti de Marco's contribution to the history of economic thought see Mosca (2005a).

Schumpeter for example recalls Pareto's position on competition, as precursor of the modern duopoly theory¹⁶⁵ and, very critically, that on monopoly¹⁶⁶; he also mentions Pantaleoni's study of industrial combinations¹⁶⁷ and Barone's on the theory of costs and the supply curve¹⁶⁸. Sylos Labini cites Pantaleoni on the importance of fixed costs¹⁶⁹, while Pareto is mentioned by Chamberlin for having distinguished "between acting like a monopolist and acting like a competitor", and again for his contribution to the theory of duopoly¹⁷⁰. And it is again to Pareto that Dennis attributes the abandonment of the idea of competition as activity¹⁷¹, while Backhouse recalls Pareto's innovations for Walras' theory of competition¹⁷²; finally, Machovec calls Pareto's description of the behavior of the monopolist "classical"¹⁷³. To this list of contributions we add both De Viti de Marco's article (1890) on the telephone industry¹⁷⁴, and the fundamental links provided by Barone to the development of U shaped cost curves (Keppeler and Lallement 2006) and to the concept of natural monopoly (Mosca 2008). As can be seen, our economists' contributions seem very promising, however no scholar has yet dealt with the specific subject of monopoly power in their thought.

3.3.2. The International diffusion of their ideas

Another important reason why these four Italian marginalists were chosen is that they were leading figures on the international scene, making Italy a central driving force in economic debate. For personal

¹⁶⁵ Schumpeter (1954 [1976]: 972-973 and 981-982).

¹⁶⁶ Schumpeter (1949: 157).

¹⁶⁷ Schumpeter (1954 [1976]: 857).

¹⁶⁸ Schumpeter (1954 [1976]: 994).

¹⁶⁹ Sylos Labini (1957 [1962]: 89; 1995: 197-199). Meacci (1998: 3) emphasizes the link between Pantaleoni and Sraffa.

¹⁷⁰ Chamberlin (1933 [1962]: 16, 36-37, 40, 52, 222-223).

¹⁷¹ Dennis (1977: 265).

¹⁷² Backhouse (1990: 68-69).

¹⁷³ Machovec (1995: 183).

¹⁷⁴ See Petretto (2002) and Mosca (2007).

reasons they were cosmopolitan¹⁷⁵, and this certainly helped them find a place in the cultural cross-fertilization of the period. They engaged in correspondence with economists throughout the world, and their work was reviewed in the best journals, in which they in turn published articles and reviews; their textbooks were translated into various languages¹⁷⁶. The secondary literature confirms that Italian ideas made up a conspicuous proportion of those circulating among the economists of the marginalist age¹⁷⁷; **there are therefore good reasons for asking ourselves if their thinking gained currency on the specific subject of monopoly power.**

We shall also be evaluating their influence at the international level on the generations that followed them on this subject, and the outlook is promising because there is already some encouraging evidence available. The first regards Knight who, considered as we said to be the initiator of the model of perfect competition, would appear to owe his “rigorous notion of equilibrium” precisely to Pareto and Barone¹⁷⁸. Further evidence concerns the influence of Pantaleoni’s theory of fixed costs on J.B. Clark¹⁷⁹ and, through him, on the following theories of competition. De Viti de Marco inspired entire areas of research¹⁸⁰; for our subject in particular there is evidence of

¹⁷⁵ Pareto, born in Paris of a French mother, was nephew to an ambassador to Constantinople, and had one Russian and one French wife; Pantaleoni, whose mother was English, gained his qualifications from school in Germany; De Viti de Marco, whose grandmother was English, married an American; Barone had very close links with German culture.

¹⁷⁶ Pantaleoni’s textbook of 1889 was translated into English in 1898, De Viti de Marco’s of 1928 was translated into German in 1932 and into English in 1936. Pareto’s 1906 *Manuale* was translated into French in 1909, but then translated into English only in 1971; Barone’s *Principi* (1908) were translated into German in 1927 and into Spanish in 1942.

¹⁷⁷ On the diffusion of Italian thought see Asso (2001) and Asso and Fiorito (2001).

¹⁷⁸ Marchionatti (2003: 66).

¹⁷⁹ As already mentioned, as well as on Sylos Labini. Asso and Fiorito (2001: 344) argue that Clark’s theory of “overhead costs” (J.M. Clark 1923), owes a lot to Pantaleoni.

¹⁸⁰ Buchanan (2003: 283) recognized the importance of De Viti de Marco as “entry point” in the research project that led him to the Nobel Prize.

possible derivations from his ideas and the most recent theories of regulation of public utilities¹⁸¹. There is also a thread that from Pareto leads to Lerner, via Amoroso, and to Lerner's famous index to measure market power, even if there is no proof of direct influence¹⁸².

4. Why a history of the ideas on the causes of market power?

Why is it important to follow up historically this notion of monopoly power? Which "arcane ideas" are revealed only if it is reconstructed by making use of this category? In other words, what makes the question we have raised a good historical question? We have several times stated that there are no studies on this subject: the suspicion may arise that if this history has not yet been written it is because it is not important. We shall try to show why we think it is.

1. We have already hinted at the possible derivation of the ideas of Sraffa as well as those of Sylos Labini and Modigliani from an Italian matrix: thanks to this category one might therefore write an Italian part of the history of the theory of non-competitive markets, which has not yet been written. We have also already mentioned possible influences of the Italian marginalists on the history of the thinking beyond their national borders and on later generations in environments akin to ours; research closely focused on the subject of the causes of market power may enable us to discover new lines of thought. So going back over the history employing this category allows us to find new derivations.

2. Finding the causes of monopoly power is as useful as finding entry barriers. The reason why it is important to know the sources of market power is the same as why it is important to know what entry barriers are; both allow us to understand what causes prevent new firms from entering an industry. We know that the historiography has

¹⁸¹ Petretto (2002) does not trace the actual paths of the ideas, but offers useful hints on how to look for them.

¹⁸² Keppler (1994b) attributes to Amoroso, a follower of Pareto, the formulation in 1930 of an index similar to the one developed by Lerner four years later (597).

not dealt with the answers that were given to this question in the years before the studies of Bain and of Sylos Labini. Yet from the few mentions provided by the secondary literature reported here we have seen that in actual fact, from the marginalist age onwards there was a great deal of thinking on the question of entry. What was lacking therefore before Bain and Sylos Labini was only the treatment of entry *in a model*: it was only in the models, not in the theory, that this subject wasn't considered¹⁸³. **So our study serves in the first place to avoid erasing from historical memory an entire chunk of theoretical thinking that is not mentioned in the history of the models, only because they are non-formalized theories.**

3. Thanks to the emerging of these theories, this category allows us to reject clearly and definitively the widespread idea that up until the Thirties in economic theory only the two extreme situations of perfect competition and monopoly were considered¹⁸⁴. On the contrary, precisely because there wasn't yet a fully worked out notion of perfect competition, the economists **were well aware of the hybrid situations, and worked out theories to explain them**. In the literature there are numerous, even if vague, references to this awareness; for example Chamberlin declares that his theory does not break with the past¹⁸⁵;

¹⁸³ Martin's (2007) recognition of Marshall is significant on this: "There are many anticipations of the limit price model, including Marshall (1925/1890: 270): The leaders in the movement towards forming Trusts seem to be resolved to aim in the future at prices which will be not very tempting to any one who has not the economies which a large combination claims to derive ... from its vast scale of business and its careful organization" (31).

¹⁸⁴ Joan Robinson states this (1933 [1969]: 3): "In the older text-books it was customary to set out upon the analysis of value from the point of view of perfect competition ... But somewhere, in an isolated chapter, the analysis of monopoly had to be introduced" and adds: "the books never contained any very clear guidance as to how these intermediate cases should be treated". Also Martin (2007) is of this opinion: "The mainstream price theory of the early twentieth century consisted of a theory of competitive markets and a theory of monopoly, with a vast wasteland in between" (27). Myatt and Hill (2003) argue on the other hand that still in the Forties textbooks were much less focused on perfect competition than they are today.

¹⁸⁵ "Although the idea has never been developed into a hybrid theory of value, it represents, so far, no departure from currently accepted doctrine" Chamberlin (1933

Galbraith describes the state of theory in the early Twenties in these terms: "Competition was not supposed perfect. Those who already operated in economic activity would have impeded access in various ways to new operators"¹⁸⁶. And again, Schumpeter writes that Marshall considered pure competition and pure monopoly as limiting cases, and the hybrid ones as fundamental¹⁸⁷. Our theoretical category of market power therefore enables us to quite clearly demonstrate that, even if not formalized in a model, a real theory of the situations in which firms have market power existed in fact.

4. What was this theory? The notion of monopoly power allows us to show that the ideas of the marginalists on entry **were mostly based on a theory that originated in adapting the classical theory of competition to the new situation:** i.e. competition was for them still an activity, as for the classicals, but limited by more pervasive and more resistant obstacles when compared to those of the age of the classicals. To demonstrate this thesis is important, because it would disprove the idea, to which we have already referred, that the greater focus on situations of monopoly in the marginalist period was due only to a mutation of the theory. In essentials, the theory didn't change, but the contextual situation did.

5. Furthermore we wish to argue that the **marginalist conception of competition has much more in common with the new industrial economics than with the theory of perfect competition**¹⁸⁸. For the recent theory competition consists of strategies adopted by asymmetric

[1962]: 66).

¹⁸⁶ Galbraith (1948 [1953]: 120).

¹⁸⁷ Schumpeter (1954 [1976]: 974-975).

¹⁸⁸ Referring to the underlying theory of competition, DiLorenzo and High (1988) state: "Economists of the late nineteenth and early twentieth centuries ... anticipated modern critics of antitrust law" (424). Blaug (1997) even goes so far as to establish a relation between classical theory and the present day one: "Producers in the *Wealth of Nations* treat price as a variable in accordance with the buoyancy of their sales, much like enterprises in modern theories of imperfect competition" (67). Petretto (2002) also confirms this thesis of ours for the case of De Viti de Marco.

firms with limited knowledge, which is a very different thing from the notion of perfect competition. One of our theses is that present day theory gave a formal appearance precisely to the conception of competition mainly adopted by the marginalists.

6. The notion of entry barriers is important also for its implications for microeconomic policy. If there are causes of market power that bring about inefficiency, and it is not a short run phenomenon, then it is necessary to intervene¹⁸⁹; and to identify these causes theory is required. The singling out of entry barriers is therefore the theoretical premise to the call for public intervention. And this was so even before Bain, even if the causes of monopoly power were not yet called “entry barriers”. In section 2.2 we argued that by looking at the origins and development of antitrust legislation the history of the concept of market power cannot be found; however, this does not at all imply that it wasn’t developed with the aim of being applied. Especially as far as our four marginalists are concerned, we can be certain that they wrote to actually influence economic policy¹⁹⁰. If, as we believe, there was a correspondence between the reform proposals put forward by the economists and the explanations they gave to the phenomenon of market power, then **the marginalist age could have been the age when for the first time¹⁹¹, and not only in the USA, the ideas on the non-legal causes of market power made up the theoretical basis for the call for energetic competition policies.** Our study therefore serves to provide the just recognition to those contributions that are not

¹⁸⁹ On the recent tendencies of antitrust on this subject Grillo (2006) writes critically: “Today, antitrust is greatly concerned with *dynamic* competition. The critical point is that incentives to innovative activity require some sort of *ex-post* monopoly. The need to foster ‘competition through innovation’, with its corollary of necessarily protecting monopoly, allegedly temporarily, is making its way in contemporary antitrust grounded as it is on dynamic ‘efficiency’ arguments, and this is setting new challenges to the received perspective” (47, author’s italics).

¹⁹⁰ Meacci (1998) “The call for reforms ... is a prominent feature of the Italian tradition” (6).

¹⁹¹ Since we saw that for the classicals the obstacles to competition weren’t really a problem.

mentioned in the histories of competition policies.

References

- Adams, H.C. 1887 *Relation of the State to Industrial Action*. Reprinted in J. Dorfman (ed.), *Two Essays by Henry Carter Adams*, New York, Kelly, 1969.
- Amatori, F. and A. Colli 1999, *Impresa e industria in Italia dall'Unità a oggi*, Venezia, Marsilio.
- Armentano, D.T. (1999), *Antitrust, The Case for Repeal*, Auburn, The Ludwig von Mises Institute.
- Asso P.F. (ed.) 2001 *From Economists to Economists*, Firenze, Polistampa.
- Asso P. F. and L. Fiorito 2001 *Dalla periferia al nuovo mondo*, Ente Einaudi, Roma.
- Augello M.M. and M.E.L. Guidi 2009, Riccardo Dalla Volta (1862-1944). In Augello M.M. and M.E.L. Guidi (eds.) (2009: 1-28).
- Augello M.M. and M.E.L. Guidi (eds.) 2009, *Riccardo Dalla Volta. Crisi della concorrenza. Concentrazioni industriali e imperialismo all'alba del Novecento*, Firenze, Le Monnier.
- Augello M.M. and L. Michellini 1997, Maffeo Pantaleoni (1857-1924). Biografia scientifica, storiografica e bibliografia. *Il pensiero economico italiano*. I: 119-206.
- Auspitz R. and R. Lieben 1889, *Untersuchungen über die Theorie des Preises*. Leipzig: Verlag von Duncker & Humblot.
- Avagliano L. 1974, *Stato, finanza e monopoli in Italia*, Salerno, Società editrice salernitana.
- Backhouse R. E. 1990 Competition. In Creedy J. (ed.) *Foundations of Economic Thought* Oxford: Blackwell: 58-86.
- Bain J.S. 1941, The profit rate as a measure of monopoly power, *Quarterly Journal of Economics*, 55: 271- 293.
- Bain J.S. 1948, *Price and production policies*, in Ellis (1948 [1953]: 153-206).
- Bain J. S. 1956, *Barriers to New Competition*, Cambridge MA: Harvard University Press.
- Bailey, S. (1825), *A Critical Dissertation on the Nature, Measures and Causes of Value*, London, London School of Economics, 1931.
- Baldassarri, M. (ed.) 1997, *Maffeo Pantaleoni. At the Origin of the Italian School of Economics and Finance*, London, Macmillan Press e New York, St. Martin's Press.
- Barone, E. 1908. *Principi di economia politica*. Reprinted in *Le opere economiche*. Bologna:

- Zanichelli: 1936, vol.II.
- Bertrand J. L. F. 1883, Review. *Journal des Savants*. 68: 499-508.
- Bianchi, P. 2007, *Industrial economics in Italy*, in De Jong and Shepherd (2007: 95-110).
- Bientinesi F. 2003, Cartelli, trusts e dumping in età giolittiana: una sfida al paradigma marginalista?, *Il pensiero economico moderno*, XXIII (4): 49-78.
- Bini, P. 1995. Quando l'economia parlava alla società. La vita, il pensiero e le opere. *Rivista di politica economica* S. III, LXXXV (3): 11-47. Engl. trans. *When Economics Talked to Society: The Life, Thought and Works*. In Baldassarri 1997: 11-46.
- Blaug M. 1997, Competition as an End-State and Competition as a Process. In *Not Only an Economist*. Brookfield, Elgar: 66-86.
- Boccardo, G. 1882, 'Economia industriale' in R. Pareto, G. Sacheri (eds.), *Enciclopedia delle arti e industrie*, 9 vols, Utet, Torino 1878-85, vol. III: 174-185.
- Bork R.H. 1978, *The Antitrust Paradox*, New York, Free Press.
- Bradley M. E. 2009, Adam Smith's System of Natural Liberty, *Journal of the History of Economic Thought*, forthcoming.
- Brown, J.H. 2007, *John Bates Clark*, in De Jong and Shepherd (2007: 175-178).
- Buchanan J.M. 2003, *Endnote*, in Fausto and De Bonis (2003: 283-284).
- Cairnes J. E. 1874, *Some Leading Principles of Political Economy*. London: Macmillan.
- Cantillon, R. 1755, *Essai Sur la Nature du Commerce en Général*, English translation *Essay on the Nature of Commerce in General*, New Brunswick: Transaction Publishers, 2001.
- Carlton, D.W. 2004, Why Barriers to Entry Are Barriers to Understanding, *American Economic Review*, 84 (2): 466-470.
- Chamberlin E.H. 1933, *The Theory of Monopolistic Competition*, Cambridge, MA, Harvard University Press.
- Chamberlin, E.H. 1937, Monopolistic or Imperfect Competition?, *The Quarterly Journal of Economics*, 51 (4): 557-580. Reprinted in the 5th edition of Chamberlin (1933).
- Ciocca P. 2008, *Ricchi per sempre?*, Torino, Bollati Boringhieri.
- Clark, J.B. 1887, The Limits of Competition, *Political Science Quarterly* 2: 45-61.
- Clark, J.B. 1899, *The Distribution of Wealth: A Theory of Wages, Interest and Profits*, New York, Macmillan, 1908.
- Clark, J.B. 1901. *The Control of Trusts. An argument in favour of curbing the power of*

- monopoly by a natural method*. New York: Macmillan.
- Clark J.B. 1904 *The problem of monopoly*, New York, Macmillan.
- Clark, J.B. and J.M. Clark 1912. *The Control of Trusts*, New York, Macmillan, rewritten and enlarged edition.
- Clark J.B. 1914, A Contribution to the Theory of Competitive Price, *Quarterly Journal of Economics*, 28, Aug. : 747-771.
- Clark J.M.1923 *Studies in the Economics of Overhead Costs*, Chicago, The University of Chicago Press.
- Clark J. M. 1940, Towards a Concept of Workable Competition, *American Economic Review*, 30 (2): 241-256.
- Collier, W.M. 1900, *The Trusts: What Can We Do with Them – What Can They Do for Us?*, New York, The Baker and Taylor company.
- Corley, T.A.B. 1990, Emergence of the Theory of Industrial Organization, 1890-1990, *Business and Economic History*, second series, XIX: 83-92.
- Cossa, E. 1888, *Concetto e forma dell'impresa industriale*, Milano, Hoepli.
- Cossa, E. 1901, *I sindacati industriali*, Milano, Hoepli.
- Cossa, L. 1877, Prime linee di una teoria delle imprese industriali, *Istituto Lombardo di Scienze e Lettere*, reprint in *Saggi di Economia Politica*, Milano, Hoepli, 1878.
- Cournot A.A. 1838, *Researches into the Mathematical Principles of the Theory of Wealth*. New York, Macmillan, 1897.
- Dalla Volta. R. 1888, La coalizione nelle economie contemporanee, *Rassegna di Scienze Sociali e Politiche*, 15 October .
- Dalla Volta, R. 1889-90, Le coalizioni industriali, *Giornale degli Economisti*, March-June: 204-221; January-April: 29-53, reprinted in Augello and Guidi (eds.) (2009: 65-90).
- Dalla Volta, R. 1900, Una inchiesta sui trusts degli Stati Uniti d'America, *Giornale degli Economisti*, November: 484-503.
- Dalla Volta, R. 1901, La questione dei trusts negli Stati Uniti, *Nuova Antologia*, June 1: 519-534. reprinted in Augello and Guidi (eds.) (2009: 91-103).
- Dalla Volta, R. 1902, Il trust navale oceanico, *Nuova antologia*, May 16: reprinted in Augello and Guidi (eds.) (2009: 65-90).
- De Jong, H.W. 2007a, *Market theory in Europe*, in De Jong and Shepherd (2007: 6-24).

- De Jong, H.W. 2007b, *Economists from the German language area*, in De Jong and Shepherd (2007: 27-49).
- De Jong, H.W. 2007c, *Market theory in the Low Countries*, in De Jong and Shepherd (2007: 56-77).
- De Jong H. W. and Shepherd W. G. 2007, *Pioneers of Industrial Organization*, Cheltenham, UK – Northampton, MA, USA.
- Demsetz, H. 1982, Barriers to Entry, *American Economic Review*, 72(1): 47-57.
- Dennis K. G. 1977, *Competition in the History of Economic Thought*, Arno Press, New York.
- De Viti de Marco, A. (1890). L'industria dei telefoni e l'esercizio di Stato. *Giornale degli economisti*. September: 279-306, Engl. transl. *The Telephone Industry and State Exercise of Said*. In Baldassarri and Ciocca (2001, vol. III: 505-529).
- Di Lorenzo T.J. and High J.C. 1988, Antitrust and competition, historically considered, *Economic Inquiry*, 26:423-435.
- Dupuit J. 1844, On the Measurement of the Utility of Public Works. In *International Economic Papers*, vol. 2, London, Macmillan, 1952.
- Dupuit, J. 1852-53a. Péage. In *Dictionnaire de l'économie politique*. Paris: Guillaumin, 2: 339-344.
- Dupuit, J. (1852-53b). Voies de communication. In *Dictionnaire de l'économie politique*. Paris: Guillaumin, 846-854.
- Edgeworth F. Y. 1881, *Mathematical Psychic*. London: Kegan Paul.
- Edgeworth F.Y. 1897, The Pure Theory of Monopoly. In *Papers Relating to Political Economy*, vol. I, London: Macmillan, 1925: 111-142.
- Einaudi L. 1934, *Prefazione* to A. de Viti de Marco, *Principi di economia finanziaria*, Torino, Einaudi, 1953. English transl. *Introduction*, in *First Principles of Public Finance*, London, Jonathan Cape, 1936: 19-30.
- Ekelund R. B. and R. S. Hébert 1999, *Secret Origins of Modern Microeconomics*, Chicago: University of Chicago Press.
- Ellis H.S. (ed.) 1948, *A Survey of Contemporary Economics*, Philadelphia-Toronto, Blakiston.
- Ely, R.T. 1900, *Monopolies and trusts*, New York, Macmillan.

- Etro, F. 2006, Competition Policy: Toward a New Approach, *European Competition Journal*, Vol. 2, 1 (April): 29-55,
- Fausto D. and De Bonis (eds.) 2003 *The Theory of Public Finance in Italy*, special issue of *Il pensiero economico italiano*, 11 (1).
- Fisher I. 1912, *Elementary Principles of Economics*. New York: Macmillan.
- Galbraith, J.K. 1948, *Monopoly and the Concentration of Economic Power*, in Ellis (1948 [1953]: 119-152).
- Gentilucci, C.E. 2006, *L'agitarsi del mondo in cui viviamo*, Torino, Giappichelli.
- Gerber, D. 1998, *Law and Competition In Twentieth Century Europe: Protecting Prometheus*, Oxford, Clarendon Press.
- Giocoli N. 2009, Competition versus property rights: American antitrust law, the Freiburg School, and the early years of European competition policy, *Journal of competition law and economics*; doi: 10.1093/joclec/nhp003: 1-40.
- Ghosal, V. and J. Stennek (eds.) 2007, *The Political Economy of Antitrust*, Amsterdam, Elsevier.
- Graswinckel, D. 1651, *Placcaten, ordonnantien ende reglementen*, Leiden: Elsevier.
- Grillo, M. 2006, The theory and practice of antitrust: a perspective in the history of economic ideas, *Storia del pensiero economico*, 2: 33-63.
- Grillo M. and F. Silva 1989, *Impresa concorrenza e organizzazione*, Roma, NIS.
- Hadley, A.T. 1896, *Economics: An Account of the Relations between Private Property and Public Welfare*, New York, G.P. Putnam's Sons.
- Hart, D.M. 2001, Antitrust and technological innovation in the US: ideas, institutions, decisions, and impacts, 1890–2000, *Research Policy*, 30 (6): 923-936.
- Hicks J. R. 1935, The Theory of *Monopoly*, *Econometrica*, III: 1-20.
- Hotelling H. 1929, Stability in competition, in *Economic Journal*, 39 (153): 41-57.
- Hovenkamp H. 1989a, The Antitrust Movement and the Rise of Industrial Organization, *Texas Law Review*, 68 (1): 105-168.
- Hovenkamp H. 1989b, The Sherman Act and the Classical Theory of Competition, in E.T. Sullivan, *The Political Economy of the Sherman Act. The First Hundred Years*, Oxford University Press, 1991: 136-157.
- Jevons W. S. 1871, *Theory of political economy*. London: Macmillan.

- Johnson, H. G. 1956, Review of "International Economic Papers No. 5", *The Economic Journal* 66 (263): 506-507.
- Keppler J. H. 1994a, *Monopolistic competition theory*, Baltimore and London, The Johns Hopkins University Press.
- Keppler J.H. 1994b, Luigi Amoroso (1886-1965): Mathematical Economist, Italian Corporatist, *History of Political Economy*, 26 (4): 589-611.
- Keppler J. 2008, *Barriers to Entry: Abolishing the Barriers to Understanding*, Working Paper, LEDa, Université Paris - Dauphine.
- Keppler J. H. and J. Lallement 2006, The origins of the U-shaped average cost curve, *History of Political Economy*. 38 (4): 733-774.
- Kleinwächter, F. 1883, *Die Kartelle. Ein Beitrag zur Frage der Organisation der Volkswirtschaft*. Innsbruck: Verlag der Wagner'schen Universitäts-Buchhandlung.
- Knight, F.H. 1921a Cost of production and price over long and short periods. *Journal of Political Economy*. 29 (4): 304-335.
- Knight, F.H. 1921b *Risk, Uncertainty and Profit*, Boston, New York, Houghton Mifflin Co.
- Kovacic, W. 1992, The Influence of Economics on *Antitrust* Law, in *Economic Inquiry*, 30 (2): 294-306.
- Kovacic, W.E. and C. Shapiro 2000, Antitrust Policy: A Century of Economic and Legal Thinking, *Journal of Economic Perspectives*, 14(1): 43-60.
- Krattenmaker T.G., R.H. Lande and S.C. Salop 1987, Market Power and Monopoly Power in Antitrust Law, *Georgetown Law Journal*, 76: 241-269,
- Launhardt W. 1885, *Mathematical Principles of Economics*, Brookfield, Elgar.
- L.R.P. 1894, Competition and Custom, in R.H. Palgrave (ed.) *Dictionary of Political Economy*, London: Macmillan: 376-378.
- Macchioro, A. 1996, Per una storia dell'economia politica italiana nell'età del positivismo. *Abbozzi, Il pensiero economico italiano*, IV (1): 7- 70.
- Machovec, F. M. 1995, *Perfect Competition and the Transformation of Economics*, London, Routledge.
- MacNulty, P.J. 1967, A Note on the History of Perfect Competition. *The Journal of Political Economy* 75 (4): 395-399.

- Magnani, I. 2003, *Dibattito tra economisti italiani di fine ottocento*, Milano, Angeli.
- Magnani I. and N. Bellanca 1991, Un carteggio inedito Pantaleoni-Barone, *Rivista di diritto finanziario e scienza delle finanze*, L (1): 24-80.
- Marchionatti R. 2003, On the Methodological Foundations of Modern Microeconomics, *History of Political Economy*, 35 (1): 49-75.
- Marchionatti R. and F. Silva 1992, Industrial Economics in Italy, in *Recent Developments in the Theory of Industrial Organization*, A. Del Monte ed., London, Macmillan.
- Marshall, A. 1890a. *Principles of Economics*. London: Macmillan.
- Marshall, A. 1890b. Some aspects of competition. Reprinted in R.L. Smyth (ed.), *Essays in the Economics of Socialism and Capitalism*. London : Gerald Duckworth, 1964.
- Martin S. 1989, *Industrial Economics*. New York-London: Macmillan.
- Martin S. 2007, *Remembrance of Things Past*, in Ghosal e Stennek (2007: 25-57).
- Marx K. 1867, *Capital; a critique of political economy*, Vol. 1 *The Process of Capitalist Production*, Chicago, C.H. Kerr & Co, 2008.
- Mason, E.S. 1939, Price and Production Policies of Large-Scale Enterprise, *American Economic Review*, 29: 61-74.
- Mazzocchi G. 1965, Sull'evoluzione del pensiero economico italiano in materia di restrizioni alla concorrenza, *Giornale degli Economisti*, March-April: 155-178.
- McAfee R.P., H.M. Mialon and M.A. Williams 2004a. *What is a barrier to entry?* In McAfee *et al.* 2004b: 461-465.
- McAfee R.P. *et al.* 2004b When are sunk costs barriers to entry? Entry barriers in Economic and Antitrust analysis. *AEA Papers and Proceedings* May: 461-475.
- Meacci, F. (ed.) 1998b, *Italian Economists of the 20th Century*. Cheltenham - Northampton: Elgar.
- Meese A. 2003, Price Theory, Competition, and the Rule of Reason, *Illinois Law Review*, 77.
- Menger, C. 1871, *Grundsätze der Volkswirtschaftslehre*, English translation *Principles of Economics*, New York, New York University.
- Mill, J.S. 1848. *The Principles of Political Economy: With Some of their Applications to Social Philosophy*. London: John W. Parker, 1849.
- Modigliani F. 1958, New developments on the oligopoly front, *Journal of Political*

- Economy*, 66: 215 - 232.
- Moore H. L. 1906, Paradoxes of competition. *The Quarterly Journal of Economics* 20 (2): 211-230.
- Morgan M. 1993, Competing Notions of "Competition", *History of political economy* 25 (4): 563-604.
- Mosca, M. 2005a. De Viti de Marco, historian of economic analysis. *The European Journal of the History of Economic Thought*. 12 (2): 241-259.
- Mosca, M. 2006, *Emil Sax and Italy*, Working paper, Dipartimento di scienze economiche e matematico statistiche n.85/42, Lecce, May.
- Mosca, M. 2007. The notion of market power for the Italian marginalists De Viti de Marco and Pantaleoni. In P.F. Asso e L. Fiorito (eds), *Economics and Institutions. Contributions from the History of Economic Thought*. Milan: Angeli.
- Mosca M. 2008, On the origins of the concept of natural monopoly, *European Journal of the History of Economic Thought*, 15 (2): 317-353.
- Motta M. and M. Polo 2005, *Antitrust. Economia e politica della concorrenza*, Bologna, Il Mulino. Italian translation of M. Motta, *Competition Policy, Theory and Practice*, Cambridge, Cambridge University Press, 2004.
- Myatt T. and R. Hill 2003, *The Emphasis on Competitive Markets in Introductory Microeconomics Courses*, mimeo.
- Niehans J. 1990, *A history of economic theory*, Baltimore, Johns Hopkins University Press.
- Pantaleoni, M. 1883. Contributo alla teoria del riparto delle spese pubbliche, *La rassegna italiana*, 15 October: 25-60. Engl. transl. *Contribution to the Theory of the Distribution of Public Expenditures*. In Musgrave and Peacock (1967: 16-27).
- Pantaleoni, M. 1889. *Principii di economia pura*, Florence: Barbera. English translation *Pure Economics*. London: Macmillan 1898. Reprint New York: Kelly & Millman, 1957.
- Pareto, V. 1906. *Manuale di economia politica*, Milan: Società editrice libraria. Revised and translated into French as *Manuel d'économie politique*. Paris: Giard et Brière, 1909. English translation *Manual of Political Economy*. New York: Kelley, 1971.
- Pareto V. [1960]), *Lettere a Maffeo Pantaleoni 1890-1923* (ed. by G. De Rosa), Rome: BNL.

- Parisi D. 1992, Tecnologia e dinamica del sistema: i sindacati industriali nel pensiero economico italiano di fine Ottocento, in *Storia del pensiero economico*, 26: 59-65.
- Peritz R.J.R. 1990, A counter-history of antitrust law, *Duke Law Journal*, 2, 263-320.
- Peterson S. 1957, Antitrust and the Classical Model. *The American Economic Review*, 47 (1): 60-78.
- Petretto A. 2002, *La moderna teoria della regolamentazione e la nozione di Stato cooperativo di De Viti de Marco*, mimeo.
- Posner R.A. 1979, The Chicago School of antitrust analysis. *University of Pennsylvania Law Review*, 127: 925-948.
- Puu T. 2002, A century of oligopoly theory. In T. Puu and I. Sushko (eds.) *Oligopoly dynamics*, Berlin, Springer-Verlag: 1-14.
- Robinson J. 1933, *The Economics of Imperfect Competition*, London, Macmillan, second edition 1969.
- Robinson, J. 1934, What is Perfect Competition, *Quarterly Journal of Economics* XLIX, November: 104-120.
- Rosado Cubero A.I. 2008, The success of an economic idea: barriers to entry, *IABE-2008 Stockholm- Proceedings*, Vol. IV (1): 276-286.
- Salop, G. 1979, Strategic entry deterrence, *American Economic Review*, 69: 335-338.
- Sax, E. 1884. *Das Wesen und die Aufgaben der Nationalökonomie: ein Beitrag zu den Grundproblemen dieser Wissenschaft*. Wien: A. Holder.
- Schmalensee, R. 2004. Sunk costs and antitrust barriers to entry. *American Economic Association Papers and Proceedings*. 94 (2): 471-475.
- Schumpeter, J.A. 1942, *Capitalism, Socialism and Democracy*, New York, Harper and Brothers.
- Schumpeter, J.A. 1949, Vilfredo Pareto (1848-1923), *The Quarterly Journal of Economics*, 63 (2): 147-173.
- Schumpeter J. A. 1954, *History of economic analysis*, New York, Oxford University Press.
- Scitovsky, T. 1950. Ignorance as a source of oligopoly power. *American Economic Review*. 40 (2) May: 48-53.
- Screpanti E. and S. Zamagni 1989, *Profilo di storia del pensiero economico*, Roma, La Nuova Italia Scientifica.

- Senior, N.W. 1836. *An Outline of the Science of Political Economy*. London: W. Clowes and Sons.
- Shepherd, W.G. 1991, Theories of Industrial Organization, in H. First, E.M. Fox and R. Pitofsky (eds.), *Revitalizing Antitrust in its Second Century*, , ch. 2: 37-66.
- Shepherd, W.G. 1995. Contestability vs. Competition: Once more. *Land Economics*. 71 (3): 299-309.
- Shepherd, W.J. 2007, Edward S. Mason, in De Jong and Shepherd (2007: 209-210).
- Simons, H.C. 1934, *A Positive Program for Laissez Faire*, University of Chicago Press, Chicago.
- Simons, H.C. 1936 The requisites of free competition. *American Economic Review* 26 (1): 68-76.
- Smith, A. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*, W. Strahan and T. Cadell.
- Sraffa, P. 1926. The laws of returns under competitive conditions. *Economic Journal*. 36 (144): 535-550.
- Stigler G.J. 1950, Monopoly and Oligopoly by Merger, *The American Economic Review*, 40 (2): 23-34.
- Stigler G.J. 1957, Perfect competition historically contemplated. *Journal of political economy*. LXV: 1-17.
- Stigler, G.J. 1968, *The Organization of Industry*. Chicago, University of Chicago Press.
- Stigler G.J. 1982 The Economists and the Problem of Monopoly, *AEA papers and proceedings*, 72(2): 1-11.
- Stigler G.J. 1987, *Competition*, in Eatwell, Milgate and Newman (eds.) (1987: 531-535).
- Supino, C. 1893, *La concorrenza e le sue più recenti manifestazioni*, Bologna, Garegnani.
- Supino, C. 1902, *Il trust oceanico*, Roma, Cecchini.
- Sylos Labini P. 1957, *Oligopolio e progresso tecnico*, Milano, Giuffré. English translation *Oligopoly and Technical Progress*, Cambridge (Mass.), Harvard University Press, 1962.
- Taussig, F. W. 1911, *Principles of Economics*, New York, MacMillan.
- Trebing, H.M. 2007, *Henry Carter Adams*, in De Jong and Shepherd (2007: 173-174).
- Utton, M.A. 2007, *The contributions of three English economists to the development of industrial economics*, in De Jong and Shepherd (2007: 111-123).

- West, E.G. 1978, The Burden of Monopoly: Classical versus Neoclassical, *Southern Economic Journal*, 44 (4): 829-845.
- White, H.G. Jr. 1936, A review of monopolistic and imperfect competition theories. *American Economic Review*, 26 (4): 637-649.
- Wicksell, K. 1901, *Teoretisk nationalekonomi* English translation *Lectures on Political Economy*, London, Routledge 1938.
- Zamagni S. 2000, Economic reductionism as a hindrance to the analysis of structural change: scattered notes, *Structural change and Economic Dynamics*, 1-2: 197- 208.