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INDUSTRIAL POLICY IN ITALY VIEWED THROUGH THE JOURNAL *L'INDUSTRIA*

Mots-clés : Économie industrielle, politiques industrielles, études empiriques

Key words : Industrial economics, Industrial policies, Empirical studies

I. — INTRODUCTION

Italian industrial economists have always been concerned by real and practical questions arising in the economy. They have been able to develop models in order to make more robust reasoning and predictions but their first and foremost attention has been to the observation and analysis of the economy and industry out there in the real world. In fact, it is difficult to find in Italy an industrial economist who does not have a deep understanding and awareness of the history, evolution and current issues facing industry.

This attention is reflected in the publications of one of the two main Italian journals dedicated to industrial economics, namely *L'Industria*, the other journal being *Economia e politica industriale*.

Reviewing a journal over 30 years is extremely difficult, given the variety of topics discussed through the years. Our aim in this paper is to show the main issues that have been examined in the journal, with a particular focus on industrial policy. One characteristic of the Italian school of industrial economics and policy is indeed the attention to policy issues, in the sense that analyses are always motivated by a policy problem and papers always pay attention to policy implications. The other main characteristic, related to the first one, is the

attention to empirical observation not only through data of the whole manufacturing sector but also through case studies of specific sectors. The belief is that looking at the details of the evolution of sectors allows to derive properties about certain trends that sometimes can be generalised to the whole industry and that in any case one cannot derive appropriate industrial policies without a deep understanding of the various productive sectors.

For this reason, the reflections discussed and published in the journal have had an important impact on policy decision-making in Italy.

Reviewing the articles published in *L'Industria* in the last 30 years shows both the thought and methodology of study in Italian school of industrial economics. Regarding the latter, Romano Prodi stresses that mathematical models and formalisation can be very useful to support claims in economics. However, too often in the international economics literature articles are published that are focused on and interested in the methodology only and not on the underlying economic questions: « *Our discipline must resist the temptation to study models which usefulness only relies on their mathematical perfection* » (Prodi, 2001, p. 580, our translation). Silva (2003) agrees with this point and emphasises that the economist has a « professional responsibility » toward the society that surrounds him (p. 529), and many elegant formalisations are just academic exercises that have no use in the real world. Jacquemin (2001) also stresses that theories should be evaluated on the basis of their capacity to organise and explain our observations of the real world. The use of game theory in industrial organisation has been useful to explain firm strategies, but it has also led to a proliferation of models, often with non robust results, since results are very sensitive to the specific assumptions made on the variables. Jacquemin argues that this leads to the possibility of theorising anything and its contrary: « give me a result, I will give you a theorem! » (Jacquemin, 2001, p. 447). Already in 1961, Acelli discussed in our journal the idea that economics is an empirical science, that aims at identifying relationships between facts, and it is not a formal science, which determines relationships between propositions that are elaborated by logic (Acelli, 1961).

Given that methodological approach, the articles published in *L'Industria* in the last 30 years have both analysed the characteristics of Italian industry and discussed industrial policy implications. Attention has never been exclusively turned to the Italian case: industry in other countries has been considered, not only in Europe but also elsewhere in the world, in Asia and America. Foreign cases are used as examples to follow or as analyses of partners or markets for Italian firms.

Regarding industrial policy, three phases can be identified in this review. The first 10 years (in the 1980s) discussed the « dirigiste » or « interventionist » type of industrial policy, whereby governments directly intervened in markets by command-and-control and by nationalisations. The second decade, that of the 1990s, saw the adoption of a new approach to industrial policy, whereby governments no longer directly intervene in markets but rather induce beha-

viour by appropriate incentives and, in terms of structural policy, provide the conditions for competitiveness. These phases correspond to the phases of industrial policy implemented in Italy and the EU. The 21st century starts with a new phase of industrial policy, that this paper tries to characterise by looking at the papers published in *L'Industria*.

The main conclusion is that the new industrial policies are still in the process of being defined in the real world, perhaps waiting for industrial economists to provide guidance. Economists and policy-makers writing in the journal stress that in the current context new models have to be built and new solutions have to be suggested. We add that a number of issues has to be examined for solutions to be proposed.

This paper is organised as follows. We first review the history of our journal in the second section, very briefly indeed given that *L'Industria* is more than 100 years old. The third section reviews the main themes or issues discussed in general about industrial economics and policy, while section 4 specifically focuses on industrial policy issues in the last 30 years. The last section concludes.

II. — HISTORY OF THE JOURNAL *L'INDUSTRIA*

The journal was created in 1886, but it was merged in 1980 with the *Rivista di economia e politica industriale* created by Romano Prodi in 1975. It really became a journal of industrial economics from that date on. The main characteristics of the approach of *L'industria*, according to Prodi (2001, p. 576) is both the great attention to applied studies, in the sense that the journal aims at being a place where the world of productive activities and the academic world could meet, and the attention to issues of the real economy, with many empirical studies allowing to interpret reality and to identify policy instruments to be implemented. In addition, Italian industrial economists stress the importance of understanding the society in which industrial activities are embedded in order to derive appropriate policy instruments. Thus Prodi says otherwise policy actions are myopic and ineffective (Prodi, 2001, p. 578).

L'Industria was created in 1886 by engineers interested in production techniques. The aim of the journal was then to diffuse an « industrialist » culture in Italy, in a moment where Italian industry was in its infancy. As stressed by Bini (1986), the journal thus contributed to the development of an industrialist *bourgeoisie* in Italy that would subsequently play an important role in the economic and political development of the country. The industrial revolution indeed started later in Italy than in other European countries such as the UK, France and Germany. The journal became more of an economic journal in 1943, when Professor Di Fenizio took the direction and gave it the subtitle: *review of industrial economics*. In 1948 the journal took the subtitle of « review of economic policy » and its focus shifted to macroeconomic issues, with contributions by economists who were internationally famous such as

Stigler, Hicks, Morgenstern, Frisch, Tinbergen, etc. In 1980 it took again the subtitle « review of industrial economics and policy ». The journal has not always been an industrial economics journal but has always been focused on industrial issues. Romano Prodi was the director of the journal from 1975 onwards while Patrizio Bianchi was director in 1992, up to 2002, where the late Fabio Gobbo took the direction. The journal currently has a double direction, with Enzo Pontarollo as director and Cesare Pozzi as co-director.

We therefore consider all the articles published since 1975, constituting slightly more than 30 years of review (articles in *Rivista di economia e politica industriale* over 1975-79, and *L'Industria* thereafter).

Hence it is really from its merger with the review of industrial economics and policy that *L'Industria* truly became a journal dedicated to industrial economics and policy issues. Romano Prodi was and still is a fundamental figure of the journal: he was the founder of *L'Industria* as an industrial economics and policy journal, and he also was the first professor in an Italian university with a chair in industrial economics and public policy, in 1970 at the University of Trento. He went to Trento in 1970 but he was trained as student at the Catholic University of Milan and had his first academic positions at the University of Bologna. Already in 1971 Prodi went back to the University of Bologna and created the Centre of Industrial Economics and Public Policy in the Faculty of Political Sciences. The Faculty trained a number of Italy's political and institutional leaders at both national and international levels: Romano Prodi was Minister of Industry in 1978-1979, President of IRI (Istituto per la Ricostruzione Industriale – Institute for industrial reconstruction) in the period 1982-1989 and in 1993, Prime Minister in 1996 and 2006 and President of the European Commission from 2000 to 2005; Fabio Gobbo was a member of the Italian competition authority from 1990 to 1997 and was under Secretary of State of the Prime Minister for industrial issues over the period 2006-2008. Patrizio Bianchi was member of the board of IRI (1997-2000) and was president of a government agency dedicated to the development of the South of the country (1999-2000).

L'Industria is published by Il Mulino, which was founded in the 1950s by the same group of young scholars as the one which founded the faculty of political sciences at the University of Bologna, guided by Nino Andreatta in particular who was also a political leader of the country, having been Minister of Treasury, Budget and Defence. Il Mulino has always encouraged political discussion and helped to diffuse social sciences in Italy.

The discipline of industrial economics and policy thus developed in the 1970s, in a very difficult period for Italy, due to the economic and social crisis and to dramatic and pervasive terrorist actions. The crisis implied the need to define new economic policies, industrial policies in particular and probably for this reason the scholars of the new discipline immediately focused on applied issues and policy implications and recommendations, which have

remained the distinguishing features of the Italian school of industrial economics and policy.

III. — REVIEW OF THE GENERAL THEMES OF *L'INDUSTRIA* IN THE LAST 30 YEARS

Given the characteristics of the approach of Italian industrial economists outlined in the introduction, the papers published in *L'Industria* have a strong empirical focus, although theory is also regularly discussed, as a way either to provide a framework for or to confirm empirical findings. In other words, the methodology is observation leading to theoretical definition to underpin empirical reasoning rather than abstract theorising guiding both observation of the real world and data manipulation.

Reviewing the themes and articles published in the journal over the last 30 years, in addition to using reviews of the field realised by distinguished industrial economists such as Gobbo (2001), we can identify ten main themes that are recurrent as topics of discussion in Italy, and which correspond to some problems of Italian industry :

1. industrial policy (competitiveness policy and policy for innovation);
2. competition and regulation;
3. sectoral issues;
4. industrial organisation in an international perspective (comparison with other countries, issues of internationalisation);
5. the problems of large firms (small number, temporary crises);
6. small firms and the advantages of their organisation in clusters (industrial districts), as well as medium firms organised in groups;
7. the governance of Italian industry (family ownership, weak capital market development);
8. the lack of development of the Mezzogiorno (Southern part of Italy);
9. the macro context of industries, such as the influence of macroeconomic policies and variables (inflation rate, exchange rate) on industry and the price of raw materials;
10. market structure and firm performance: empirical or theoretical studies of the determinants of firm performance and specialisation, the link between market structure and innovation, and so on.

Of course, this classification is imperfect, given that some articles could fall into different categories. For instance, an article dedicated to a particular sector often derives industrial policy issues. Articles dedicated to specific sectors also regard specific firms: sectors with large economies of scale comprise

large firms, while industrial districts operate mainly in traditional sectors. Articles were therefore classified according to the issue they argued to primarily address. It is meant to be indicative, not exhaustive.

The following table shows the percentage of articles or notes published on each of the above topics over the period 1975 to 2008.

*TABLE 1 : Articles published on the various topics in the period 1980-2007
(Percentage of the total number of articles)*

Sectors	20,5
Industrial and innovation policy	19,6
Competition and regulation	14,3
Market structure and performance (from empirical and theoretical points of view)	13
Industrial structure in international perspective	9
Small and medium firms	6,6
Large firms	5
Macro context of industry (influence of macroeconomic policies, price of raw materials, etc.)	5
Governance of Italian industry	3,7
Mezzogiorno	3,3
Total	100

The table clearly shows the predominance of policy issues, given that 35 % of articles published in the period have these as main topics (both industrial-innovation policy and competition-regulation). In addition, most of the articles published that have other themes as main topics, such as sectors, the issue of the South of Italy, large or small firms, in any case discuss policy issues and policy implications. Italian industrial economists thus appear to be primarily concerned with policy issues. This is in line with the approach defined by Prodi and mentioned above.

Over the last 30 years however, focus has slightly changed with a significant rise in articles dedicated to competition and regulation relative to those on industrial policy (Figure 1). This is due to a number of reasons. First, the adoption and necessary transposition of European Directives liberalising (or reforming regulation) in telecom (entering into force in 1998) and energy markets (Directives adopted in 1996 and 1998), together with other network industries such as air transport, railways and postal service. Second, the greater attention to competition issues in Italy and the more active work of the Competition Authority. Third, but related to the first two, the large privatisation programme. Fourth, and more importantly we would say, the shift in policy focus perfectly reflects the three phases of industrial policy we have identified obser-

FIGURE 1 : Percentage of articles dedicated to industrial policy and to competition-regulation, 1980-2007

ving the implementation of industrial policy (Bianchi and Labory, 2006a, b; Labory, 2006).

Articles published on competition and regulation primarily regard regulatory issues, such as third party access, the determination of tariff of access to the network, the role of independent authorities, the separation of the various phases of the production process, and so on. Whereas telecom liberalisation is generally presented as a success, the benefits of liberalisation of energy markets is not presented as always resulting in positive effects, given the issues of access to the network, universal access, energy dependence and relationships with producing countries (for instance, Abate and Clô, 2000).

Competition policy has generally been considered in *L'Industria* as a component of industrial policy. Industrial policy consists in measures aimed at defining the rules of the competitive game and measures aimed at encouraging the participation of agents in the competitive game. Competition policy is part of the « rules ». Its aim is not only to ensure consumer welfare through allocative and productive efficiency, it is also to protect the economic freedom of rivals on the market and to diffuse private economic power and to protect individual rights (Jacquemin, 2001, p. 448). EU competition policy aims primarily at protecting the competitive process, not at reaching perfect competition; at ensuring « possible » competition in markets, not perfect competition. This implies that competition authorities must value case by case and use pragmatism as well as economic science.

Industrial and innovation policy remains of primary concern, but they represented a higher part of articles before 1990 (a quarter) than afterwards (16 %).

Another important aspect of the journal *L'Industria* are papers dedicated to specific sectors, which represent about one fifth of all articles. This reflects the applied character of the journal as explained in the introduction.

The fact that many papers consider the international perspective shows that Italian industrial economists are concerned with the comparison with other countries and, in these days of globalisation, with the internationalisation of Italian firms. About a tenth of papers are dedicated to international issues each year. Recently for instance the threat of Chinese competition has been analysed, given that Italy is specialised in traditional sectors such as textile and clothing and leather where competition from countries with low labour costs is high (e.g. thematic papers in the issue 1/2004 on Asia and the issue 3/2007 on the internationalisation of Italian industry; Prodi G., 2006, 2007).

Next come studies specific to some type of firms. The studies of large firms that have been published generally examine the crisis this type of firms has been experiencing in Italy in the last ten years. One issue was even dedicated to the FIAT crisis in 2003 (see Bianchi, 2003).

Regarding small firms, papers generally show the various advantages of the organisation into clusters or especially districts. Last, attention has increasingly turned to medium firms because they appear as new « actors » of Italian industry that have grown in size over the last decade and appear as solid actors since they are often organised in groups that can exploit some of the scale and scope economies that are specific to larger actors.

Another important characteristic of the analysis of industrial issues in *L'Industria* is the constant attention not only to competition and performance, but also to equity and social cohesion. According to Filippi (2007), this follows the work of two important Italian industrial economists, Giorgio Fuà and Franco Momigliano, whom other Italian industrial economists followed. Patrizio Bianchi in particular developed a specific approach that he himself calls « neo-smithian », in that it is based on the writings of Adam Smith (Bianchi, 1998). In this view the efficiency of production is based on the capacity of a social organisation, be it a firm or an industrial district, to simultaneously develop specific competencies that allow individuals to specialise together with a process of complementary searching by which complementarities between specific competencies and specialised activities can be found. The market is seen as a social construct, whereby fair competition first of all means equal opportunity to all individuals to participate in the competitive game.

L'Industria is also characterised by the organisation of conferences dedicated to the current debates regarding industry. Table 2 shows all the annual congresses that have taken place since 1976. This historical list of the themes of

TABLE 2 : The annual congresses of L'Industria

1976	Urbino : First conference of <i>L'Industria</i>
1977	Ancona : Limits to growth and adaptation of an industrial system, the Italian case
1979	Pisa : The governments in industry
1980	Naples : Industrial policy, from a system based on incentives to a system based on interventions
1981	Turin : Analysis of the state of the industrial system
1982	Copanello : Public procurement and its consequences on industry
1983	Trento : Protectionist policies and industrial development : is protectionism necessary in case of crisis ?
1984	Cagliari : Innovation, the State and the firm
1985	Trieste : What productive model is needed to end the crisis
1986	Milano : The 100 th anniversary of <i>L'Industria</i>
1987	Bari : Competition policy
1988	Bergamo : Industrial systems' adjustment processes
1989	Sassari : Industrial strategies and the rules of the game
1990	Ancona : Theory of the firm and industrial economics
1991	L'Aquila : Competition and regulation
1992	Turin : The German economy and the new Europe
1993	Rome : Analysis of the Italian industry using the new Census
1994	Pavia : Changes in economic institutions and new development of Italy
1995	Ravello : Institutions and development in the South of Italy
1996	Piacenza : The role of independent regulators (competition and energy)
1997	Bari : The Italian economy and the mediterranean countries
1998	L'Aquila : Globalisation and competition. How is the Italian industry changing
1999	Udine : reorganisation of the Italian industrial system in the euro era
2000	Naples : The role of authorities in the Italian economy (10 years of competition policy in Italy ; regulation issues)
2001	Bologna : 25 years of Italian « industry ». Firm organisation, corporate governance, firm growth
2002	Palermo : European industry in the euro era
2003	Parma : The New Europe, United States, China
2004	Ancona : Strategies and policies for the competitiveness of Italian industry
2005	Cosenza : New centre and new peripheries. Mezzogiorno, Italy and Europe
2006	Turin : The 30 th anniversary of <i>L'Industria</i> (since the merger) Turning back to development. Old and new protagonists of Italian industry
2007	Foggia : Beyond the regulating State. Scenarios and industrial policies for a globalised economy
2008	Pescara : Competitiveness and the environmental challenge. Industrial strategies and public policies
2009	Ferrara : Industries, governments and the global crisis

L'Industria annual meetings is interesting for two main reasons. First, it confirms the main themes of interest outlined above. Second, and more importantly, it shows *L'Industria* has distinguished itself in Italy by its ability to anticipate the economic and political debate regarding industry. Thus, in the early 1980s the effectiveness of the traditional, « interventionist » industrial policy (see section below) is increasingly debated, and in effect a congress is dedicated to incentives *versus* direct intervention (1980), one to public procurement as a tool of industrial policy (1982) and one to the usefulness of protectionism (1983). Another illustration is the 1987 congress, dedicated to competition policy while competition policy in Italy really starts in 1990, with the adoption of the antitrust law (legge 287/1990) that reflects the European law and with the creation of the Italian competition authority (Autorità garante della concorrenza). In 1992 the congress is dedicated to the « New Europe », meaning countries in Central and Eastern Europe that are transforming into market economies and raise a number of issues and opportunities for Italian industry. In the end of the 1990s and early years in the new century, many congresses are dedicated to international issues, such as the intensifying global competition, the competition from emerging countries and the opportunities of the wider Europe, in the sense of the European Union and its neighbours in the Mediterranean basin. In the last three years attention has been dedicated to the new industrial policies that we discuss in more depth in a specific section below.

Of course, the fact that most industrial economists managing or contributing to *L'industria* have also been (often important) policy-makers of the country has been a key determinant of the capacity of the journal to anticipate key political and economic debates.

In addition, it was the intention of Romano Prodi and his followers to make the journal a vivid and useful forum for economic and political debate. Thus, Prodi and Bianchi, in their introductory article of the 1986 issue dedicated to the 100th anniversary of the journal, illustrate this programme: « ...“making” a journal means coagulating diffuse interests and project them through time, offering a cultural programme that could constitute the nervous system of an epoch, of a group, of a problem » (1986, p. 351). This objective was pursued not only through the debate effectively discussed in the journal and the congresses, but also in the composition of the scientific board, which has always included since 1980 both industrial economists, from Italy and abroad, economists from other economic disciplines and technicians working in the national institutions.

L'Industria has generally discussed issues that regard not only the Italian industry but also industries in the rest of Europe and of the world, like the issue of the new industrial policies that we examine in section 5. However, a review of the articles published in the last 30 years also lead to an outline of some important issues that are specific to the Italian case.

First, the review shows that the difficulties of large Italian firms have been existing since the 1970s. According to Bianchi (2001a), 1975 is the year of creation of *L'Industria* but it is also the most dramatic year for large Italian firms, who face a deep crisis with social unrest, rising energy costs and sales reductions. According to Filippi and Zanetti (2001), Italian large firms have been unable to adapt to changes in the economic environment. After an extraordinary development after the Second World War, from the end of the 1960s onward Italian large firms get closed in a rigid process based on standardisation and economies of scale, and appear unable to find appropriate responses to the wage claims of workers and to the changing tastes of consumers: the former want higher wages, the latter more variety. According to Filippi and Zanetti (2001), the financing structure of Italian large industry also favours rigidities, large firms being primarily governed by family owners when private, but a large part of them being publicly-owned companies, while the financial markets were inefficient. Later on from the 1980s onward, large firms start to adapt, reducing vertical integration and adopting flexible production systems.

The large privatisation wave started at the beginning of the 1990s with the closure of the public organisation IRI (1). According to Bianchi (2001a), this privatisation programme has allowed a restructuring of Italian industry and the emergence of new actors, such as medium firms and firms specialised in services. The privatisation programme of the 1990s is probably one of the largest realised in the world, due to both its financial extent (many industrial firms have been privatised, most of which were large firms, such as gas and electricity firms, but also banks, etc.) and to its institutional extent: this programme implies a complete upheaval of the Italian institutional structure whereby private banks develop and also SMEs (new actors with predominant family ownership again).

A vivid debate has taken place in Italy mainly since the 1990s about the decline of Italian industry (Gallino, 2003; Berta, 2004; Boeri *et al.*, 2005). A number of economists see Italian industry in a deep crisis due to four major factors (Balloni and Iacobucci, 2004): first, the too small size of firms, since Italian industry is characterised by a small number of large firms (with difficulties) and a predominance of small and very small firms; second, the specialisation in traditional sectors (Made in Italy); third, the governance of Italian industry primarily based on family ownership; and fourth, the weakness of the environment (inefficient public administration, corruption, etc.).

Regarding the first problem, the small firm sector results performing well, but it does not appear as a sector well equipped to face future challenges, since it faces competition from emerging countries, being specialised in traditional

(1) Istituto per la Ricostruzione Industriale: Institute for Industrial reconstruction, created in the 1930s in order to promote industrial development in Italy, which will nationalise a large bunch of industrial firms up to the privatisation of the 1990s and will be closed in the turn of the 21st century; see Bianchi (2001b), Gnudi (2001).

sectors, and since Italian small firms tend to remain small and not to experience growth as such firms normally do.

A number of economists do not talk about decline but rather about difficulties and put forward the advantages of small size (Becattini, 2007). Small Italian firms have been able to face competitive challenges since the 1970s thanks to their organisation in industrial districts or clusters. According to Silva (2003), the studies of industrial districts have concentrated attention on the advantages of such type of industrial organisation and have not sufficiently discussed their inconveniences (external diseconomies and weaknesses of the entrepreneurial culture in particular).

In fact one can argue that the organisation in industrial districts, namely the so-called « flexible specialisation », has been effective up to the 1990s, where it even appeared as an alternative to the organisation in large firms. Large firms in the 1990s were decentralising and reducing vertical integration, organising as networks of firms (suppliers, designers, assemblers, etc.) so that the two models could even be seen as converging. In the turn of the new century the economic context increasingly changes with the emergence of new competitors, from Asia and from Eastern Europe, who would base their advantage first on low cost but increasingly also on skills and innovative capacity. In this context, industrial districts no longer appear as an optimal form to compete. Romano Prodi summarises the challenge in 2002, quoting the Chinese Industry Ministry he met as President of the European Commission in Brussels: « we have, in China, a productive capacity that is enough for the whole world and we still have to assume 300 million workers »! (Prodi, 2002, p. 559).

Perhaps as a result, the Italian industrial structure has experienced the development of new actors (« nuovi protagonisti »), namely firms often organised into groups (Balloni, Iacobucci, 2001), which dimension is medium (200-500 employees) if one considers the entire group that the firm controls. These medium firms are mainly localised in the North-East of Italy and each control about 23 small firms on average. They operate in the main sectors of specialisation of Italy, namely traditional sectors. Many such medium firms actually grow within industrial districts (Brioschi *et al.*, 2001). In fact, the constitution of groups of firms linked by formal linkages of cross-participation has been a characteristic of Italian industrial districts since the year 2000. Alternatively districts appear to develop relationships with large firms in order to face the new competitive challenges (and access to world markets).

Industrial districts have been discussed in *L'Industria*, but attention has not been exclusively dedicated to it. The benefits of the organisation of small firms into districts (organisation where firms are linked by vertical relationships) or, more generally, clusters (comprise both districts and horizontal types of groupings) have been highlighted but, unlike a large part of the Italian literature on districts, the disadvantages of such organisation have been emphasised too. The difficulties in making investments in order to internationalise or innovate have been outlined, which have turned out to be big problems in this phase of

globalisation. Industrial districts have always been seen in *L'Industria* as one possible form of production organisation, optimal at some time and in some context but not always. In the last ten years industrial districts have been transforming as a result of the challenges of competition from emerging countries, with the delocalisation of some production phases abroad, in countries with lower labour costs (Mariotti *et al.*, 2006), in Romania in particular; with the constitution of formal groups of firms (Balloni and Iacobucci, 2001; Brioschi *et al.*, 2001) and/or the rise of one medium firm as leader of the district that grows and guides the other firms up to becoming a configuration looking like a large firm with its network of suppliers. Medium firms have been subject to much more interest in the journal than small firms and industrial districts: two special issues have been dedicated to that type of firms, in 2005 and 2007. The special issue regarded the governance of Italian medium firms (Alzona, Iacobucci, 2005) while that of 2007 focused on internationalisation and innovation (see Alzona, 2007). The main protagonists of the journal seem to have always been convinced that medium and large firms are more equipped to face current innovation and internationalisation challenges facing industry. Alzona (2007) explains why medium firms are so interesting. He sees three main reasons: first, medium firms have a high survival rate, they stay in industry for long; second, they can constitute the future large firms of the country; and third, they often constitute evolutionary forms of industrial districts. The only problem regarding medium firms is that they are mainly in traditional, low technology sectors, which do not have the potential to represent competitive advantages for the country as high technology sectors do.

V. — NEW INDUSTRIAL POLICIES SINCE 2000

Figure 1 of the previous section is a useful starting point for a more detailed discussion of industrial policy through the publications of *L'Industria*. The figure indeed shows three phases corresponding to the three last decades. In fact, the phases are one ending in the mid-1980s, a second phase from the mid-80s to the end of the 1990s and a third phase in the new century. These phases are characterised by different approaches to industrial policy.

In terms of articles published in our journal, figure 1 shows that the percentage of articles dedicated to industrial and innovation issues reduces drastically from the early 80s to the end of the 90s, and rises again in the first years of the new century. Articles, and therefore attention to, competition and regulation rise constantly through the whole period.

These trends correspond to the trends in industrial policy since the early-80s. After the second world war and up to the early-80s industrial policy in Italy and in the rest of the world was characterised by direct intervention of the State into markets, the State often being a producer (nationalisation) and regulation being of the « command-and-control » type, whereby standards and behaviour are imposed on firms and other agents rather than induced through the market mechanisms. From the mid-80s starts a liberal phase, and industrial policy

changes radically, governments no longer directly intervening in markets and preferring to provide the right conditions for firms' competitiveness, leaving the market mechanisms operate on their own. The term « industrial policy » even becomes obsolete.

The turn to the new century is characterised, to a certain extent that we now explain, by a return of industrial policy.

Looking at the papers published in *L'Industria*, we can examine this change by starting from a point made by Filippi (2007). According to this scholar, two important themes have emerged in the last ten to twenty years in the journal (Filippi, 2007): first, the shift from a producing State to a regulating State, and second, the importance of the « competitive triangle » for industrial development, as defined in the 2004 congress, consisting in innovation, organisation and human capital. The three assets constituting the competitiveness triangle are all intangible assets, that have grown in importance in the globalised, knowledge-based economy (Bianchi and Labory, 2004).

This theme is important not only in Italy, but also in the rest of Europe and of the world. The deep changes that are occurring in the world are first, the intensification of exchange of all types of goods and services, be they tangible or intangible, physical or financial; second, the emergence of new economic and hence political powers in Asia and Russia; third, the end of the division of the world in the Western and Eastern blocks; fourth technological progress and the diffusion of new technologies like the ICTs and biotechnologies. All these changes create new and important challenges for developed countries, the hegemony of which is put into question.

Bianchi and Labory (2004) show that all the above changes that one can summarise into the term « globalisation » have led to an intensification of competition in most productive sectors that in turn has implied the need for firms to increase product innovation. Only frequently innovating can a firm maintain its competitive position. For this purpose, the firm needs intangible assets, namely, knowledge, the capacity to innovate, human capital, and the capacity to organise production in a flexible way in order to be competitive. This growing importance of intangible assets regards the whole economy, as shown by a number of studies (Bianchi and Labory, 2004).

De Bandt (2006) also argues that the economy has profoundly changed from the 1980s and stresses that the growing importance of intangible assets generates risigne knowledge intensity and complexity of production processes. As a result, new industrial policies are needed, for four types of reasons. First, knowledge-intensive production systems create new needs that have to be satisfied. Second, there are high learning costs for firms and individuals entering into the new economy and adopting the new production systems. Third, market mechanisms appear inadequate to organise and realise the necessary dynamics. Fourth, there are important collective dimensions of the complex knowledge production processes that are not straightforwardly obtained.

Audretsch and Thurik (1999) also analyse the changes arising in the economy, the structural changes that are induced and the need for governments to define new industrial policies that help develop comparative advantages in new, high tech sectors.

There is now quite a large consensus on the fact that new industrial policies have emerged in recent years (Cohen, 2006; Chang, 2006; Bianchi and Labory, 2006). Such policies do not represent a return to old-type, interventionist policies of the past but rather represent the adoption of a pragmatic approach to policy, whereby all possible measures and instruments are considered beyond ideology if they can increase effectiveness. A new phase of industrial policy implementation can therefore be identified (Labory, 2006; Bianchi and Labory, 2006a, b) corresponding to the years 2000, where the strategic role of the State in industrial development returns (Pozzi, 2008).

Labory (2006) shows that a large variety of definitions of industrial policy are proposed in the literature. Some definitions are specific and selective and exclude « horizontal » measures that impact upon all sectors and all firms, such as R&D promotion projects, training programmes aimed at providing adequate skills for firms, and so on. Other definitions and points of view are broader, comprising all government actions that influence industry. For instance Lall (1994, p. 651) defines industrial policy as all government actions adopted with the aim of reaching a level of development that is higher than the level of development that a system of free market would allow to reach.

In *L'Industria*, industrial policy is taken in a broad sense of all measures aiming at spurring industrial development.

Regarding the phases of industrial policy, Labory (2006) analyses the evolution of industrial policy in eight countries since 1945 and concludes that all countries appear to have followed broadly the same evolution, in that three phases of industrial policy definition and implementation can be identified. These phases are presented in table 3.

TABLE 3 : The three phases of industrial policy			
Phases :	Interventionist (1945 to 1970s)	Liberal (1980s and 1990s)	Pragmatic (years 2000)
Main policy elements :			
<i>Rules :</i> Competition policy Regulation	Weak enforcement Command-and-control Government as regulator	Strong enforcement Incentive-based Independent regulator	Strong enforcement Incentive-based Independent regulator
<i>Capabilities :</i> Industry specialisation	Strong (emphasis on vertical measures)	Medium (horizontal measures)	Strong (both vertical and horizontal measures)

Source : Labory (2006)

In the interventionist phase, national champions are supported with various measures, often including state-ownership. The link between government and industry is very strong. Competition policy when existing is weakly implemented. In the liberal phase, the objective of industrial policy is to create the condition for competitiveness, that is, guarantee the rules of the game (strong competition policy) while avoiding public intervention in industries (even in the case of natural monopolies that are regulated by independent regulators). The approach of regulation is to provide incentives so that economic actors adopt the right behaviour rather than directly impose the behaviour; in other words, the approach is incentive-based instead of command-and-control. Some public support to industry is implemented but essentially with horizontal measures. The state determines the rules of the game and property rights and checks that they are respected, eliminates rigidities, corrects information asymmetries, efficiently supplies inputs necessary to the economic system such as labour, technology and infrastructure (Pontarollo and Solimene, 2006).

In the pragmatic phase, the rules of the game are still emphasised but the action in favour of firms' competitiveness, particularly in new sectors, is emphasised again. Industrial policy is still defined as aiming to create the conditions for business to prosper, but this means not only providing the rules of the game, but also implementing some vertical or strategic policy if necessary.

The new strategic sectors are promoted in order to ensure a certain level of competitive advantages. For this purpose, innovation policy is one of the most important policy of the new industrial policies. It is implemented through R&D subsidies, the promotion of relationships among actors in the innovation system, especially at territorial level. Human capital is also key because it is the vehicle of knowledge exchange and the engine of knowledge creation. The training of high skill workers is therefore emphasised, with often objectives defined by governments in terms of percentage of the population with scientific and technological diplomas (France, China, Japan).

Regarding Europe, competition policy has always been important in the economic integration process because it is essential to the functioning of the Common Market. Without a market that any firm from any member country can access, the essence of the economic integration process is lost. Old type industrial policies are incompatible with a Common market because they consist in direct government interventions that sustain national champions in a race or a competition among States. In the economic integration process, the attitude is no longer of competition between States but of a common project to reach common goals. Amato (2004) shows this and argues that the dominance of competition policy over industrial policy (defined as old-type industrial policy) is inevitable in a process of economic integration, since in such a process the construction of a common market becomes fundamental and common interests override national ones. Since the beginning of the European integration process industrial policies have remained national but have been essentially aimed at helping firms which incur difficulties in adjusting to the wider common market (Bianchi, 1998).

In the context of globalisation and knowledge-based economy the most important intangible assets that a country can develop appear to be knowledge and human capital, that are fundamental to contribute to the capacity to accumulate knowledge, innovate and translate innovations into new products and services. Hence it is very important for governments to implement R&D and innovation policies, as well as policies aimed at educating and training people. What Italian industrial economists recommend in particular is to increase the scope of European innovation policy. In particular, Romano Prodi (2004) stresses that the EU should invest much more in such intangible assets not only at national level but also at European level, so as to create European research centres that could gather the best brains of Europe and a lot of resources in order to constitute world centres of excellence that lure financial, physical and human capital from all over the world.

This means that European universities should truly internationalise and become European poles of excellence too (Prodi, 2004).

However, in the proposition of the European Commission of new policies that are more relevant, integrated and consensual, perhaps the aspect which is most missing is political consensus. In particular, consensus should be that making some resources and competences in common at European level could help industrial development.

In this respect, Florio (2005) argues, examining European economic policies, that in fact R&D and innovation should be regarded as public goods that would require financing at European level to truly pool European resources, in European agencies (that finance European poles of excellence in specific high tech sectors) (Florio, 2005). Fitoussi *et al.* (2007) make a similar proposal, suggesting, in an interesting report to the European Commission, that a new project for the EU could be the creation of the Europe of public goods. Education, innovation, but also defence, justice and security, are all public goods that should have a European dimension in the economic integration process. However, these goods all have a political dimension that the EU seems to be incapable of facing nowadays, given the impossibility of consensus.

This is exactly what Florio (2005) claims. For this author, European institutions can favour growth and industrial development not only and not so much by pushing market liberalisation, but rather by more actively providing catalysts such as public demand at European level for infrastructure and innovation. The European Commission always uses the USA as a benchmark against which to compare European performance. A gap has been existing between the two economies for more than 30 years, and policies so far adopted do not seem to have produced the expected benefits in terms of reducing this gap. Florio argues that the main reason is that policy intervention in the EU is fragmented among countries, with only a small part implemented at European level. He compares the spending of the two regions in defence, where a big part of funds go to research and innovation: the US spend at federal level about \$ 420 billion when France, Germany, Italy and the UK together only spend \$ 125 bil-

lion. The US funds guarantee a market to US large firms that are more eager to invest in R&D and provide the new technologies.

Hence, according to Florio, there is a need for a truly European R&D programme that would pool European resources and allow European firms to have investments and market at a continental level. For this purpose, the European budget should be increased, which requires most of all a political consensus that is now lacking.

The industrial policy debate has also been vivid in Italy and economists of the Italian industrial economics school seem to agree on the need for a new industrial policy in Italy that would face both the structural disadvantages of the country and the challenges of globalisation and the knowledge-based economy. Thus Bianchi (2008) claims the new industrial policy should no longer be based on a unique law that favours restructuring or innovation but on a strategy for the whole country that would constitute the focal point of all actions at local and national levels and of all the actors of industrial development. Gobbo (2008) suggests the country should develop new comparative advantages and specialisations, by investing in particular sectors in which high competencies already exist and which can have a large potential for the rest of the economy. According to Gobbo (2008, p. 18), one particular sector should be the energetic and environmental sector. Romano Prodi adds that not only should Italy develop new sectors but also and perhaps primarily aim at strengthening existing leaders : « we must convince ourselves that if we want to remain in the competition we have to point to the firms that are already international players » (2008, p. 27, translation by the authors). Prodi adds that « small is beautiful » is no longer true and that policy should promote firm growth and the cooperation between firms.

Pontarollo (2008) highlights that competition rules and liberalisation of certain sectors, blocked by corporatism, is also necessary to ensure industrial development nowadays.

Romano Prodi therefore concludes that « more than in particular sectors, it is important to invest in the specific and distinctive competencies of the country and then leave the market (that should be liberalised and efficient) combine these competencies in the different sectors » (2008, p. 51, translation by the authors).

Deaglio (2008) claims that in the current competitive context economics does no longer propose adequate models and that « there are no models to follow anymore but solutions to construct » (p. 79), in the sense that economists should study again the determinants of the wealth of nations and of individuals' well-being in the new economic (political, social and cultural) context. Gobbo too argues that a new conceptual framework has to be developed in order to derive adequate new industrial policies. Thus he highlights that numerous studies have been dedicated to industrial policies in recent years but these studies have not been able to derive single answers to the question of the forms and modes in which industrial policy, regulation and antitrust should combine (Gobbo, 2006).

CONCLUSIONS AND EMERGING ISSUES

A famous professor, policy-maker and protagonist of Italian industry, Giamaria Gros-Pietro, argued in *L'Industria* that « it is incredible that we made it and that we remain, although with difficulties, among the leading countries of the developed world » (2001, p. 712, our translation).

Whether this reflects the opinion of most Italian industrial economists or not, it seems in any case, looking at the papers published in *L'Industria* in the last ten years and looking at the themes of the last congresses, that Italian industrial economists have doubts about the capacity of Italian industry to face the current competitive challenges of establishing knowledge-intensive production processes at an international scale.

Italian industrial economists are convinced that globalisation has made the modernisation of Italy and the elimination of structural delays more urgent. What is needed is the modernisation and rationalisation of infrastructure, liberalisation, improvement in the relations between universities and firms, and a redefinition of the rules of product markets, labour markets and financial activities (Prosperetti and Sembenelli, 1998). The conviction is that the State still has a specific role to play, especially in innovative sectors or sectors characterised by externalities (Prosperetti and Sembenelli, 1998, p. 688).

As Zanetti claims in 1999 (p. 631), « the desirable step to make is the shift from a framework aimed at controlling excess profits and abuses of dominant position to a framework which priority is the promotion of the ability to compete, growth and employment ».

Sterlacchini (2004), as well as Grilli and Mariotti (2006) are more precise and claim that what is needed in Italy is a policy aimed at redefining its comparative advantages away from traditional sectors and towards new, high tech sectors. They show that countries like Asian countries, but also Ireland and Israel have adopted policies aimed at favouring the emergence of specific sectors. Approaches have differed, some being interventionists (Japan, Korea) and others more market-friendly (Ireland, Israel, Taiwan, Singapore), but all have precisely selected the industrial sectors that should be promoted. We can add that not only these countries, but also France, Germany, the USA have adopted that type of policies. Sectors can be promoted by investing in infrastructure and research for these sectors (R&D, labs, etc.) and most of all in human capital.

Regarding industrial policy in Europe, the papers published in our journal in the last ten years show that a new industrial policy is needed after the liberal phase that has characterised the 1980s and 1990s. Many elements and arguments have been discussed, about the definition, need and modes of implementing this new industrial policy. However, there is no consensus on its composing elements, neither on its objectives. For some it should aim at economic growth, for others at industrial development, for yet others at developing new sectors. Measures that should be adopted include ensuring competitive markets, supporting national champions, investing in intangible assets, supporting newly

created high tech firms. Consensus seems to appear on the fact that technology and innovation policy is the key aspect of the new industrial policy.

But even in the liberal phase industrial policy did not completely disappear. Thus Pontarollo and Solimene (2006) argue that despite the European Directives liberalising network industries like telecommunications, energy and transport, most European countries have not pushed liberalisation and privatisations as far as anglo-saxon countries.

An important conclusion of this review of *L'Industria* is that it is high time to develop a unified theoretical and conceptual framework in which to analyse the necessity and modalities of industrial policy. There exists different theories and approaches (neoclassical, evolutionary, institutionalist, etc.) that make recommendations on various aspects of a country's industrial strategy (for instance, not only of course but mainly on antitrust and regulation for the neo-classical approach and on innovation policy for the evolutionary one).

Another important aspect to examine is the adequate level of definition and implementation of industrial policy. Industrial policy is partly European and the subsidiarity principle helps allocate functions to the European *versus* the national levels. However, the issue is most of all as to whether policy should be defined and implemented at national or regional (local) levels. During the interventionist phase of industrial policy the approach was top-down, everything being centrally decided and implemented. During the liberal phase the approach turned to bottom-up, with a stress on the importance of territory in spurring industrial development. There are advantages to the bottom-up approach, such as the proximity to local preferences so that choices can be more democratic and so that choices are closer to the agents' preferences (better access to information) and the reduced number of stakeholders that makes an agreement easier. However, industrial policy is a broad concept and includes many different actions that should be distinguished in a discussion of the appropriate level of policy definition and implementation. It is likely that certain things are better done at national level and others, at regional or local level. For instance, sustaining the creation and growth of firms in specific sectors may be better done at local or regional level, where policy-makers are better aware of the competencies present locally and of the possible synergies. However, the financing of basic research and the plan to develop particular technologies may be better done at national level, where more resources can be gathered and where coordination of the various efforts in the country can be realised. In fact, policy decision-making at local level has different possible drawbacks. First, local politicians know local stakeholders so well that they may get captured. Second, the non local component of firms' relationships may not be well taken into account by local politicians: firms have relationships with suppliers or partners in innovation in other regions in the same country or abroad, which local politicians may have the capacity to take into account. Learning processes or evolutionary processes may be locked in at local level which an intervention at national level may resolve.

In general industrial development starts at a local level where strong synergies and complementarities can be exploited but after an initial phase focused on local relationships industrial development requires the setting up of relationships outside, in the rest of the country and abroad; at that later phase it may be that at least some industrial policy actions may be better implemented at higher policy levels.

Further discussion of this issue is beyond the scope of this paper; however, it constitutes an important policy question in Italy given the decentralisation process of many policies that has taken place in the last ten years.

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