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***From the Industrial District to the District Group.
An Insight into the Evolution of Local Capitalism in Italy***

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Abstract

The aim of this paper is to fold to analyse the content of corporate grouping in the main industrial districts of Emilia Romagna and the reasons for their formation and development and to show how their evolution in recent years requires rethinking the very concept of industrial district in favour of a unit of analysis capable of grasping the role taken by ownership linkages among firms. In this respect, we suggest a taxonomy of business groups that brings out the key role played by district groups. The choice of Emilia Romagna as our field of investigation is motivated by the fact that in a number of ways the region's industrial system represents a paradigmatic model of local capitalism, combining the large scale presence of industrial districts with a marked entrepreneurial spirit, strong social cohesion, and an exceptionally efficient system of local institutions and intermediate organisations. In this sense, even though we start from the empirical study of a case albeit a significant one like that of Emilia Romagna, our paper has the more general purpose of depicting the forms and ways through which a special form of local capitalism characterised by the massive presence of industrial districts has evolved, while at the same time signalling the need to reconsider the theoretical concepts and methods of empirical inquiry used to analyse and interpret the new forms taken on by the Italian local capitalism.

EL classification L22

Key words Industrial districts, business groups, district groups, Emilia Romagna, local capitalism.

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1 Introduction

Italy's model of industrial development has always been viewed as anomalous in the panorama of the industrialised economies. Satisfactory long run performance, on the whole, despite a number of structural weaknesses, has been achieved by an industrial system consisting largely of small and medium size enterprises not generally operating on a large enough scale to withstand international competition. This paper examines two of the most convincing among the many explanations suggested for this anomaly, in their relation to the phenomenon of industrial districts. The first explanation lies on the presence of long run informal linkages among firms, which tend to generate agglomeration economies and, more generally, Marshallian externalities that take the place of economies of scale internal to the individual firm. This explanation which has a general validity has been proffered to account for the success of Italy's industrial districts, constituted by territorial agglomerations of small and medium size businesses interacting in a single production sector (Brusco, 1992; Becattini, 1991, 1993, 1990). The second explanation essentially disputes the significance of the statistics on firm size in the Italian manufacturing industry. If instead of the single firm one considers the business group (if, that is, one discards the legal definition in favour of the economic substance of the concept of enterprise) then firm size rises substantially (Barca *et al.*, 1991). This is because, as it is well known in the business groups literature, a set of firms under the control of a single owner or a single coalition of shareholders may in many respects (central handling of various business functions, extended power towards the banking system, suppliers and customers, exploitation of other synergies) be considered as a larger size single enterprise. It is perfectly plausible that such a phenomenon be found also within industrial districts with the gradual replacement of informal relations between firms by mutual ownership linkages.

Despite the potential importance of interlocking shareholdings among firms within Italy's industrial districts, with the significant exception of some recent empirical research reviewed in Section 2 the vast literature on industrial districts has shown surprisingly little interest in this issue. One possible reason is that the precise prevalence of groups in industrial districts is extremely hard to identify with available statistical data (Hittford, 2001, p. 10). This is precisely the theme of the present paper. We show in particular

a) that Emilia Romagna's industrial districts are in fact characterised by significant corporate grouping, making the actual size of district firms larger than the official statistics exhibit

b) that the groups detected in the districts under investigation in this study are mostly composed of firms belonging to the district district groups, this evidence being at once a factor of rupture and of continuity with the districts *modus operandi* as described in the literature.

The paper is empirical: the conclusions derive from an interpretation of observed facts. The empirical analysis is conducted at several different levels, and with a variety of methodologies. First, we perform a broad spectrum statistical analysis on all the firms in Emilia Romagna with no ownership structure in order to determine how many belong to a group. The analysis is performed for the entire region, for the three sub regions into which Emilia Romagna is traditionally divided, and finally for its thirteen historic industrial districts Section 2. Next, a field survey is carried out on four especially important Emilia Romagna's industrial districts with the aim to bring to light the features of the business groups and the reasons for their formation and development Section 3. Finally, a number of theoretical and policy implications are offered with regards to the effects of corporate grouping on the district organisation Section 4.

The choice of Emilia Romagna as our field of study is motivated by the fact that in a number of ways the region's industrial system represents a paradigmatic model of local capitalism, combining the large scale presence of industrial districts with a marked entrepreneurial spirit, strong social cohesion, and an exceptionally efficient system of local institutions and intermediate organisations see, among others, Brusco, 1992 Bellini, 1990 Bianchi and Gualtieri, 1990. Thus, even though we start from the empirical analysis of one case albeit a significant one like Emilia Romagna, our paper also has the more general aim of analysing the ways and forms in which a particular form of local capitalism marked by industrial districts has evolved and been transformed over the years, while at the same time signalling the need to revise the theoretical concepts and methods of empirical inquiry used to analyse and interpret the new forms of Italian local capitalism.

To conclude, it is worth mentioning that our study represents the most comprehensive empirical research ever carried out in Italy on corporate grouping, both at the statistical level (more than 10,000 firms involved) and at the field survey level (100 firms interviewed). On the other hand, while recognising the relevance of our results, we are fully aware that solely considering the firms with disclosed ownership structure allows us to capture the behaviour of only a portion of the firms of a district, typically the largest size ones.

2 Industrial districts, ownership linkages and business group structures

The debate over the structural, organisational and developmental specificities taken on by the Italian industrial system in the course of the 1990s has grown and been articulated into at least two different directions of inquiry. One has led to the recognition of the pervasiveness of the business group form not only among large firms listed and unlisted alike but also among small and medium size enterprises. The other in this strand above all the studies of the Banca of Italy Barca *et al.*, 1997 and of Mediocredito Centrale Barbetta *et al.*, 1998 has emphasised that in many cases the business group¹ is small Italian enterprises preferred way to cope with changes in market conditions and rules of competition and to respond to the need to expand in size. The second strand of research focuses on the evolution of the main industrial districts by e.g. *et al.*, 1990 Cossentino *et al.*, 1991. This line of research has adopted the theoretical paradigm and the analytical approaches first developed, in the Italian literature on industrial districts, by Brusco 1992 and Becattini 1983, 1985, 1990. As it is well known, these two scholars returned to the Marshallian concept of industrial district² as a unit of analysis offering a most useful conceptual framework in the interpretation of the structure and industrial organisation of a large number of Italian local systems of small and very small businesses.

Despite the importance of business groups and industrial districts in the interpretation of the specificities of the Italian economy, only recently have the two strands of inquiry been integrated Bianchi and Gualtieri, 1990 Iesti, 1992 Dei Ottati, 1993 Brusco *et al.*, 1994 Cainelli and Nuti, 1995 Balloni and Iacobucci, 1996 Becattini, 1997 Bianchi *et al.*, 1998 Brioschi and Cainelli, 2001. Bianchi and Gualtieri 1990 clearly sightedly understand the on going evolution of industrial districts already a decade ago, spotlighting the process of concentration via the formation of business groups. Iesti 1992 shows how the formation of groups within industrial districts identifies for these local production systems a new evolutionary model. In her analysis of the main Tuscan industrial districts, Dei Ottati 1993 shows that district firms tend to organise themselves in groups. This tendency apparently dates back to the early 1990s, though it is only in the

¹ A business group can be defined as a set of legally independent companies connected by reciprocal shareholding linkages which, taken as a whole, permit unitary control of all their activities Brioschi *et al.*, 1998, p. 11.

² An industrial district can be defined as a socio territorial entity which is characterised by the active presence of both a community of people and a population of firms in one naturally and historically bounded area Becattini, 1990, p. 1. It follows from this definition that industrial districts have a two fold scope, one referring to the social environment and one related to the economic environment Dei Ottati, 1993.

subsequent decade that she finds that district firms essentially grow by the creation of new units and by the acquisition of new companies which were already operational but possibly found themselves in financial difficulties, owing to a lack of orders because of changes in demand (Dei Ottati, 1998, p. 2). Analysing the same industrial districts under investigation in this paper, Brusco *et al.* (1998) suggest that in Emilia Romagna there is a strong tendency towards an increase in industrial concentration. The authors show, in particular, that this process has been primarily carried out through the creation of business group linkages rather than through mergers and acquisitions resulting in single juridical firms. Cainelli and Nuti (1998), in a paper published within a three article symposium in the *Journal of Industry Studies* on the development of Italian industrial districts in the late 1980s and early 1990s, suggest that these production systems reorganise themselves in hierarchies because predictable relationships among partners can be an effective weapon against unpredictable market relationships, privileging voice over exit (Hittford, 2001, p. 10).

A common feature of these papers is that they do not try to measure the extent of corporate grouping within the industrial districts under investigation. An attempt in this direction has been provided for the first time by Balloni and Iacobucci (1998), who present the findings of a survey on groups of small firms in the leading industrial districts in the Marche region. This study brings out several interesting features of the group form within districts: i) close relationship between the activities of the group firms and those of the originator firm; ii) growth of groups through formation of new companies engaged in activities similar especially in the 1980s or complementary especially in the 1990s to those of the originator firm; iii) low degree of separation between ownership and control: the equity held by shareholders outside the controlling core – typically, the family of the founder of the originator firm – is unlikely to reach 20 percent. Becattini (1998) documents the district groupification with reference to a number of Tuscany's industrial districts. Bianchi *et al.* (1998) and Brioschi and Cainelli (2001) are the first contributions to the research presented in this paper. Their main achievement is to show that at least for some industries, the phenomenon of industrial districts can be traced back not only to the sort of informal links among firms largely highlighted in the literature but also to the presence of formal, equity arrangements (Bianchi *et al.*, 1998, p. 21, our translation).

3.1 *The data, the group-identification algorithm and the sample*

To identify business groups in Emilia Romagna we have combined two statistical sources: the Emilia Romagna's **archivio Soci** (i.e., the shareholder database of Infocamere) and the **Impero** database of the regional agency for technological development Agenzia per lo Sviluppo Tecnologico dell'Emilia Romagna, AS E. The Emilia Romagna shareholder database covers all regional firms required to register their ownership structure with the Chamber of Commerce, i.e. to report the names of their owners (individuals or legal persons) and their ownership stakes. The Impero data bank gives information on location, economic sector and number of employees of all firms with legal head offices in Emilia Romagna. The reference data used here for both data sets is the end of 1999.

From the shareholder database we extracted 1,000 regional firms with a non-ownership structure. Their shares are held by 102,000 individuals and 1,000 companies. Of the latter, 1,000 are in turn among the set of the 1,000 extracted; the other 1,000 are firms whose ownership is unknown but about which, thanks to Impero, we do have a good amount of other information, such as location, economic sector and size in terms of number of employees. To avoid losing some ownership links and precious information on the characteristics of the business groups, in the effort of reconstructing the groups we used both the 1,000 firms with known ownership structure and the 1,000 outside firms that figure among their owners. This gave us a set of 2,000 firms (Figure 1). To identify the business groups, we applied the algorithm described below.

Unfortunately, both data sets have gaps relevant to an analysis of the extent of corporate grouping (e.g., the shareholder database contains firms for which a full ownership structure is not available, while some firms of the Impero data bank do not report the number of employees).

Although they constitute only 10 percent of Emilia Romagna based firms (which numbered 10,000 at the end of 1999), the firms in the shareholder database are the most important ones, representing all the incorporated companies with headquarters in the region. To ascertain this, consider that they account for more than half of all Emilia Romagna firms' employees, and that the regional firms not in the database average less than two employees each.

Of which 1,211 are headquartered outside Emilia Romagna.

Figure 1 – Composition of the sample to which the group-identification algorithm was applied

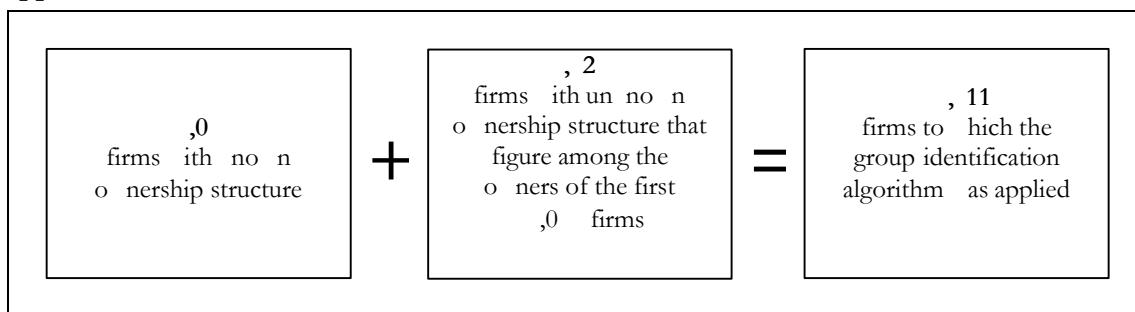
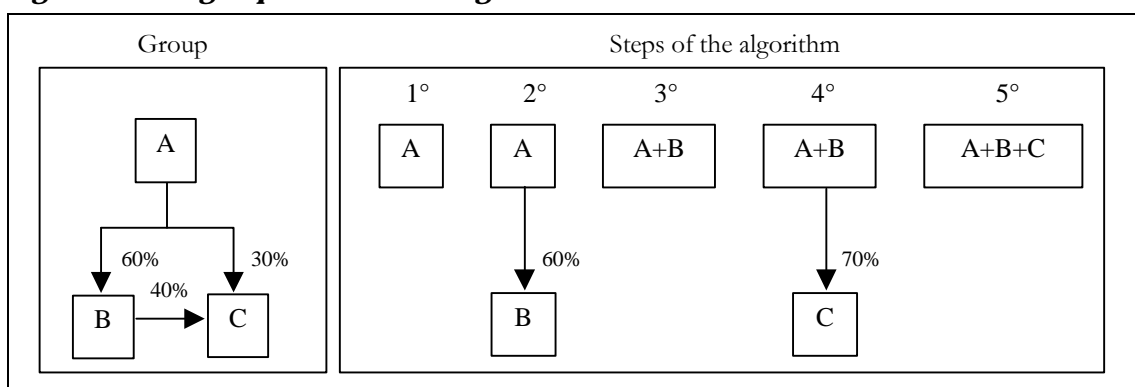


Figure 2 – The group-identification algorithm



The algorithm follows an extremely simple iterative procedure. The first step uses a selection criterion that identifies potential group controllers, which can be either companies or individuals. The companies selected are those for which it is not possible to find a controlling owner in the database. The individuals are those who hold absolute majority stakes in one or more firms. At each following step, the algorithm applies a procedure to search for all the firms controlled with an absolute majority stake by the group controllers and by all the firms associated with the group controllers up to the previous step. The algorithm ends when no more of the still unassigned firms is controlled by any of the existing groups. At the end of the iterative procedure, the algorithm identifies groups composed of firms linked by absolute majority shareholdings, groups composed of firms bound together under the control of the same individual, and isolated firms. To illustrate the mechanism, Figure 2 traces the reconstruction of a group consisting of three companies in which firm A is the parent company. At the first step the algorithm identifies firm A as the group controller. In the next two steps it identifies firm B and associates it to

The algorithm groups firms only if connected through absolute majority ownership linkages, i.e. shareholdings of more than 50 percent.

the parent company at the fourth step it recognizes that group A-B holds a 0 percent stake in firm C finally, at the fifth step it links firm C with the group that controls it.

At the end of the group reconstruction process outlined above, the 21 non-regional firms employed in the algorithm were eliminated, together with another 11, firms with headquarters in Emilia Romagna for which the Impero database does not include the number of employees. This gave us a new set of 1,000 firms with legal headquarters in Emilia Romagna and a known number of employees. This is the reference sample for the rest of the statistical investigation. Interestingly, despite the cuttings that were carried out the degree of representativeness of the sample is very good: the total number of employees of the 1,000 sample firms is 2,200, that is more than 2 percent of all employees of the firms located in the region.

3.2 The extent of corporate grouping region-wide and in the three sub-regions

Let us now present our main findings on the extent of corporate grouping among our sample companies, first at the regional level, then for the three geographical sub-areas into which Emilia Romagna is ordinarily divided: Bellini, 1990, and finally for the thirteen historic industrial districts in the region.

Table 1 – Sample firm group members by size and geographical area

Size class number of employees	Central Emilia		Parma and Piacenza		Rest of the region		Total region	
	All firms	In group	All firms	In group	All firms	In group	All firms	In group
	No.	No.	No.	No.	No.	No.	No.	No.
1	1,000	210	1,000	100	1,000	200	2,000	200
10-19	2,000	200	2,000	200	2,000	200	2,000	200
20-99	1,000	100	1,000	100	1,000	200	2,000	200
100-199	200	100	200	100	200	100	1,000	100
200-999	100	50	100	50	100	50	1,000	50
≥1,000	200	100	200	100	200	100	1,000	100
Total	22,100	2,200	22,100	2,200	22,100	2,200	22,100	2,200
Total ≥10	19,100	1,900	19,100	1,900	19,100	1,900	19,100	1,900
Total ≥100	1,200	600	1,200	600	1,200	600	1,200	600
Total ≤10	21,000	2,100	21,000	2,100	21,000	2,100	21,000	2,100

Table 2 – Employees of sample firm group members by size and geographical area

Size class number	Central Emilia	Parma and Piacenza	Rest of the region	Total region
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As already mentioned, the extra-regional firms were used in the group identification process because they could represent the link between other (seemingly) disjointed regional firms.

In methodological terms, this set of firms should not be labelled as a sample. Without imperfections in the data banks, in fact, the set of Emilia Romagna firms with no ownership structure considered could correspond to the entire population of incorporated companies in the region.

According to Inioncamere data, at the end of 1990 the number of employees of firms with headquarters in Emilia Romagna was 1,200,000.

of employees	All employees		All employees		All employees		All employees	
	No.	In group	No.	In group	No.	In group	No.	In group
1	,	20.	12, 1	1 .0	1 , 1	1 .1	, 1	1 .1
10 1	,	2 .	,	20.	1 ,22	2 .0	, 1	2 .
20	, 1	.	1 ,	2 .	22, 0	.2	,	.
0	,	0.	,0	2.2	1 ,2	.2	1,	.
100 1	,2 1	2.	, 2	.2	1 ,2	1.	,1 0	.
200	1,02	1.	10,	2.0	1 , 0	.	, 02	.0
00	2 , 1	.	, 1	1.	10,	2.2	,	0.
≥1.000	, 2	.	11,	0.	,1	0.	1,	0.
total	,	.	0,	.	11 , 2	0.	2,2	0.
total ≥10	00,	1.0	,0	1.	,2	.2	,	.1
total ≥ 0	20 , 12	.	,	.1	2, 1	2.	12, 2	.
total ≤ 0	1 0,	2 .2	, 10	21.	,2	2 .0	22 , 22	2 .

Table 1 shows the distribution of companies belonging to a group by size and geographical area. Looking for now only at the last column, referring the entire region, we see that the incidence of business grouping rises along with firm size. In particular, the percentage of firms belonging to a group rises from 20.2 percent for firms with 1 employees to . percent for firms with 1,000 employees or more. In the whole, the share of sample firms organised in groups is 2 . percent for all firms and . percent for firms with at least 0 employees this being, due to data unavailability, the size threshold usually considered in the studies on the extent of corporate grouping¹⁰. Table 2 gives the distribution of employees of the sample firms belonging to a group by size and geographical area. Interestingly, more than half of all the employees or for companies belonging to a business group, whilst for firms with more than 0 employees the share of employees of firms organised as a group rises to over two thirds.

Now let us turn to the three traditional sub areas of the region Central Emilia the provinces of Bologna, Modena and Reggio Emilia, the provinces of Parma and Piacenza, and the rest of the region the provinces of Ferrara, Ravenna, Forlì-Cesena, and Rimini. Going back to Table 1, we find that most of the sample firms are located in Central Emilia 1 percent, while the distribution of firms by size is virtually uniform throughout the three areas¹¹. As to the extent of group membership, there is some geographical difference while the region wide average is 2 . percent, the share of firms belonging to a group is 2 . percent in Central Emilia, just 1 . percent in the area of Parma and Piacenza, and 22. percent in the rest of the region. This result which is confirmed by the employee

¹⁰ It is interesting to compare these findings with those of the Banca d'Italia for groups of manufacturing firms nationwide Barca *et al.*, 1998, p. 12. The comparison shows that the extent of corporate grouping in Emilia Romagna is, on average, comparable to the one detected at the national level, but within Emilia Romagna the incidence of groups among smaller firms is much greater.

breadth given in table 2 is somewhat surprising in view of two considerations: first, that Central Emilia is the area comprising most of the region's industrial districts and, second, that, according to the literature on industrial districts, relations among firms within a district are governed by co-operation agreements and informal mechanisms based on mutual knowledge and reputation rather than by formal ownership linkages. In the light of the higher incidence of group membership among Central Emilia enterprises, we elected to take our inquiry to a further level of detail, examining the extent of corporate grouping within the industrial districts of Emilia Romagna.

3.3 The extent of corporate grouping within the industrial districts

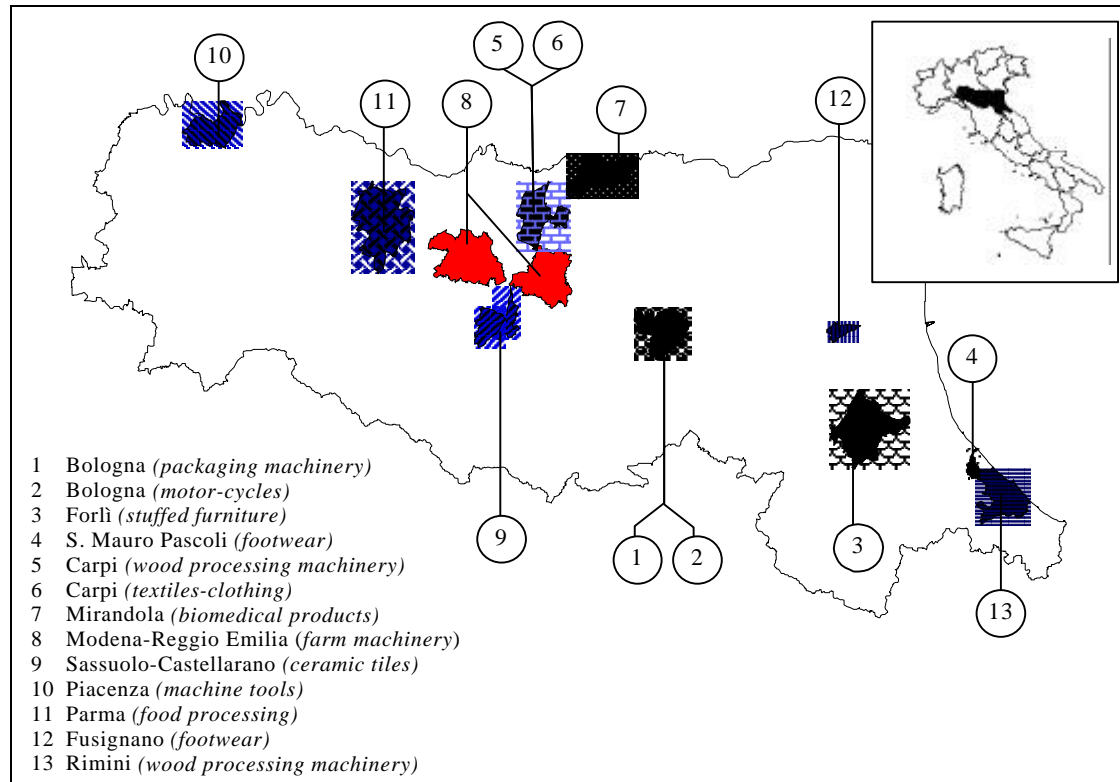
The first problem in this kind of surveys is that of definition: how to identify the industrial districts to be studied. The rich and diversified literature on Italian districts has in fact devoted considerable attention to devising definitions that could be useful for purposes of empirical research. In this regard, let us just cite the contribution of Sforzi (1990) and the vigorous debate that followed the enactment of Law 111/1991 in the effort to develop quantitative indicators for mapping Italy's industrial districts.

As we know, however, many problems have remained unsolved, mainly for three reasons. First, the concept of industrial district is hard to capture on the basis of a simple set of statistical indicators, in that districts are not only composed of production apparatuses: they also include whole series of social relations and value systems (Brusco *et al.*, 1991, p. 1). In other words, the complexity and articulated structure of the district as a unit of analysis may make its recognition arbitrary at times, and thus also its empirical identification with a given economic and geographical configuration. Second, even though some statistical indicators are agreed to be significant for the empirical identification of a district, a few fundamental problems remain open. The most important is that using Istat's classification by branches of activity (A-EC) to recognise a district produces a bias against areas specialising in metalworking and engineering. This is because, whilst a textile or a shoemaking district are readily picked up from the product standpoint using the two or three digit A-EC code, this is not true for a metal and engineering district, in which firms engaged in different stages of the production process are tagged with different code numbers. Third, there is the problem of defining the territorial boundaries of a district. In the consciousness of the above described problems, in this paper we shall identify the

¹¹ In order to avoid overloading table 1, this distribution is not given, but it can be easily observed that in all three areas about 50 percent of the firms has less than 50 employees and only 2 percent has more than 100

industrial districts of Emilia Romagna referring to the set of choices adopted by the research team coordinated by Brusco *et al.*, 1999. Hence, the industrial districts examined are those displayed in Figure 3 and listed in Table 3.

Figure 3 – The thirteen industrial districts in Emilia Romagna



Source Brusco *et al.*, 1999, p. 1.

Table 3 – Corporate grouping among Emilia Romagna's industrial district firms

Industrial district	All Firms		Firms with non-ownership structure			
	No.	Employees	No.	Employees	of firms	of empl. ^a
Motor cycles Bologna		2	2	222	2.1	2.
Food processing machinery Carpi			2	2	.	2.1
Stuffed furniture Forlì		2, 1	1	1,1	1.1	.
Biomedical products Mirandola	2	1,01	1	1,	2.	.1
Ceramic tiles Sassuolo Castellarano	2	1,	2 2	1, 2	2.	.
Machine tools Piacenza	101	1,2			.	1.
Footwear Fusignano	1	1,	2	,	2.	.
Food processing machinery Rimini	1	1, 0	1	1, 1	.	1.
Packaging machinery Bologna	2	2, 1	112	11	2.	1.1
Footwear San Mauro Pascoli	1	2, 20	1	1,	12.	2.
Textiles clothing Carpi	2,	11,02	,	,	1.1	2.2
Farm machinery Modena Reggio Emilia		, 1	12	, 0	2.	.
AL		, 1 2	1, 2	, 2	2.	1.2

^aShare of employees working in firms belonging to a group over total employees.

employees.

able shows the incidence of the group model among the firms operating within the thirteen regional districts. Of the overall 1,300 regional district firms extracted from Impero, using the Emilia Romagna's shareholder database we were able to trace the ownership structure of 1,200. Notice that, though accounting for about 22 percent of the firms extracted from Impero, in terms of employees the set of 1,200 firms with no non-ownership structure considered represent more than 20 percent of the Impero archive. Of these 1,200 district firms with no non-ownership, 22.2 percent, that is, a considerably higher percentage than for the entire region belong to a group. Moreover, if we assess corporate grouping in terms of employees instead of in terms of firms, then the extent of business grouping raises up to 1.2. These are most significant findings, largely confirming the evidence put forth above of remarkable groupification even in the areas of Emilia Romagna characterised by a multitude of small enterprises and by industrial districts. Going into greater detail, the district areas with the highest incidence of groups are those of ceramics in Sassuolo and Castellarano (2.1 percent in terms of firms and 1.2 percent in terms of employees) and packaging machinery in Bologna (2.1 and 1.1 percent). Conversely, the district firms operating in traditional sectors such as tiles and clothing, furniture or footwear show a lesser propensity for the group form. In particular, in the knitwear and garments district of Carpi only 1.1 percent of the firms with no non-ownership belongs to a group, whereas in the stuffed furniture district of Forlì and in the footwear district of Fusignano group membership is even lower, at 1.1 and 0.8 percent, respectively.

Corporate grouping within four industrial districts: a field survey

So far we have highlighted the significant extent of corporate grouping among Emilia Romagna's district firms. In this Section we present the results of the succeeding phase of our work that of an extensive field survey undertaken in four of the thirteen regional districts with the aim of identifying the main features of business groups and understanding the reasons for their formation and development¹². The industrial districts chosen for the field survey are those of farm machinery in Reggio Emilia and Modena, tiles and clothing in Carpi, packaging machinery in Bologna and footwear in San Mauro Pascoli. Needless to say, this selection may have influenced some of our findings, lumping

¹² We wish to thank Federico Caloi, Mauro Casamatta, Vittorio Checchia, Fulvio Delaiti, Simona Fantini, Simona Galimberti and Roberto Marabini for outstanding research assistance during the field survey.

together as generic industrial districts local systems that differ sharply in size, technology and organisation.

4.1 A new procedure for identifying business groups

There is a necessary methodological premise to the account of our supplementary inquiry into the four districts selected. In particular, the algorithm used so far to identify business groups in Emilia Romagna from a data set of individual firms underestimates the extent of corporate grouping. This is because, lacking full information on the firms ownership and control structures as we shall see shortly, the algorithm has two weaknesses first, it does not identify all the possible forms of business group second, it may not recognise a firm's membership in a group that has already been identified.

To clarify the nature and the relevance of these problems, let us cite a few of the many possible examples. As for the first weakness, consider a group consisting of two companies, where the first is owned 90 percent by a husband and 10 percent by his wife and the second is owned 10 percent by the wife and 10 percent by the husband. For a group of two companies controlled by three owners with varying ownership stakes, each lower than 50 percent, in the two companies. These are two simple instances of what is actually a very large number of cases of groups that the algorithm cannot pick up. These groups exist not as the result of ownership linkages between firms but as the expression of a set of firms bound together by the fact of all being owned by a coalition of shareholders. Nonetheless, since we have no information on shareholder coalitions as for unlisted firms there is no requirement that coalitions be publicly disclosed, it is clear that corporate groups like those just depicted will slip through our algorithm's net. As to the second limitation the inability to always recognise membership in a group that has already been identified recall from Section 3.1 that our group identification algorithm recognises as group members only firms more than 50 percent of whose equity is held by group companies. Involving a set of over 1,000 firms Figure 1, the algorithm was prudently set up with this criterion and not with that of grouping firms tied to a corporate group through a however large minority stake and with dispersed residual ownership. For in fact if one cannot verify the situation **ex post**, then one risks to attribute the control of a firm to the holder of a minority stake, while the actual majority may be in the hands of a set of shareholders, each with a small equity interest.

Having explained the two weaknesses of the algorithm, it shall now be clear that the only way to overcome them is by manual reconstruction of the group structures. Finding

firms one by one and identifying their shareholders by name and address, we can identify coalitions of shareholders and verify – relying also on additional information for each district such as trade fair catalogues and trade association publications – whether a firm in which a minority stake is held is actually part of a group. In a study like ours, focusing on corporate grouping in local production systems and industrial districts – where family controlled groups and permanent shareholder coalitions are a likely hypothesis – the two limitations of our algorithm may have led to a significant underestimate of the extent of corporate grouping. Having decided to restrict our attention to a limited number of districts, and hence to a much lower number of firms than the original 1,000, we resolved to re-assess the incidence of the group form in these districts by tracing group structures manually.

Table 4 compares the results obtained when the 101 firms with no non-ownership in the four selected districts are classed as stand alone or group members first using the old algorithm and then using the new manual method. The bottom row of the table shows that the extent of corporate grouping detected using the new procedure is practically twice as large – 2.1% – as against 1.1% percent.

Table 4 – Corporate grouping in the four industrial districts: two group-identification methods compared

Industrial district	All firms with no non-ownership structure	Old algorithm		New manual procedure			
		Stand alone	In group	Stand alone	In group		
		No.	No.	No.	No.		
Farm machinery Modena eggio Emilia	12	.0	0	2	0.0	2	0.0
Textiles clothing Carpi	2	2.0	1	1	0.5	1	0.5
Machine tooling machinery Bologna	112	.1	2	2	1.1	2	1.1
Footwear San Mauro pascoli	1	1.0	2	12	1.2	11	1.1
Total	101	1.1	1	2	2.1	1	1.1

The results confirm the remarkable and systematic underestimate of corporate grouping produced by our group identification algorithm. This suggests that the previous count of the extent of business groups in Emilia Romagna and in the three sub areas is highly underestimated as well. In other words, these findings support the view that the pervasiveness of the group organisational form in Emilia Romagna is even greater than the already high level detected in our previous analyses.

4.2 The sample structure

For each of the four districts selected for the field survey we identified a sample of firms, each of which was interviewed directly with the aid of a questionnaire. In the whole,

the four samples account for 1% of the 2001 population firms with no membership. Methodologically, the four samples were identified by means of a dual stratification of the reference population. The first criterion was firm size, measured by the number of employees. All the empirical work on business groups has in fact shown that as firm size increases, so does the frequency of group membership (see, among others, Barca *et al.*, 1991; Barbetta *et al.*, 1991; Bianchi *et al.*, 1991). Within each size class, firms were then sampled in proportion to the incidence of group membership within that class size. In other words, the second stratification was achieved by adopting the criterion of group membership, such membership being determined using the manual procedure described in Section 3.1¹. The interviews with the stand alone firms were conducted for purposes only indirectly relevant to the topic under inquiry here. That is, gathering information on both types of firm, we sought to check whether behaviour and features differed, size being equal, between group and non group firms. Preliminary results not given here suggest that the differences are in fact very substantial: small firms belonging to a group have parameters such as financial behaviour, productivity and profitability typical of larger independent firms, suggesting that firms in group can be regarded as divisions of a larger size enterprise. This evidence goes in the direction of confirming that the business group, more than the single firm, should be the proper unit of economic analysis.

Table 5 – Corporate grouping^a in the four industrial districts: population and sample compared

Industrial district	Population			Sample		
	All firms with no membership structure	In group No.	0.0	All firms with no membership structure	In group No.	0.0
Farm machinery Modena Reggio Emilia	12	2	0.0		2	0.0
Textiles clothing Carpi		1	0.2		1	0.2
Machinery Bologna	112		0.0		0	0.0
Shoes San Mauro Pascoli	1	11	0.0		1	0.0
Total	201	13	0.0		13	0.0

^a Group membership is evaluated using the manual procedure.

The results of the sampling are given in Table 5. In general terms, the structure of each sample shows quite a good resemblance to that of its reference population. Additionally, it is worth noticing that the degree of coverage of the samples is very high compared to other work of this kind.

¹ For a more detailed description of our sampling strategy, and of the methodology in general, see Brioschi and Cainelli (2001).

4.3 The findings: main quantitative characteristics of business groups

The main quantitative results of the field survey are set out in tables 9 to 10. Starting from the 100 sample firms, a total of 100 groups were identified in the four districts under inquiry, with an average of 1.2 firms per group. This overall average conceals a substantial difference between the two traditional districts textiles and footwear and the two higher tech districts farm and packaging machinery in that the former tend to exhibit corporate groups composed of a significantly lower number of firms.

For a closer reading of this evidence, in the course of the study we developed a taxonomy of business groups, according to which the group structures found within the industrial districts under investigation could be classed in four types: **i** pseudo groups, **ii** conglomerate groups, **iii** district groups, **iv** international groups. The term pseudo group refers to a structure consisting of just one production company plus one or more financial and/or real estate firms, the latter often employing very little staff or none at all. It is generally employed as a mean to separate the owners' corporate activities from their additional properties real estate or other. Conglomerate groups are arrangements of two or more firms operating in separate industries and generally include one or more financial real estate companies. These structures highlight the entrepreneurs' business dynamism and ability to diversify across investment types. A district group is a cluster of firms headquartered in the district that are engaged in the district reference production sector, whatever their compartment or level in the product chain. They may include one or more financial or real estate companies. The presence of this type of group significantly affects the district organisational structure since it enhances the district industrial concentration and/or degree of hierarchisation. Finally, an international group is a highly evolved and diversified structure with one or more companies within the district generally, production companies and one or more companies abroad typically, marketing and financial arms.

Applying this classification to the groups identified in the field survey, we obtained the results shown in table 11. The most frequent type of business group detected in the four districts is the district group, testifying the importance of this particular organisational form in local production systems such as those under investigation. This architecture is pre-eminent in the districts of Modena Reggio Emilia, San Mauro Pascoli and Carpi, whilst the packaging machinery district in Bologna seems to be distinguished by the presence of group structures with a pronounced international orientation. In this

respect, however, it has to be noted that in cases out of the Bologna based international groups are former district groups that over time expanded internationally.

Table 6 – Types of business groups in the four industrial districts

Industrial district	All groups	Firms per group	pseudo group	Conglomerate	District	International
	No.	Average	No.	No.	No.	No.
Farm machinery Modena eggio Emilia	20	.	2		12	1
Textile clothing Carpi	0	.	10		1	1
Shoemaking machinery Bologna	20	10.			1	
Footwear San Mauro ascoli		.		1		2
Total		.2	1	10	1	1

Table 7 – Industrial diversification of business groups in the four industrial districts

Industrial district	Number of groups	Corresp. number of group firms	Industrial within district sector	Commercial	Financial	Real estate	Industrial out of district sector
	No.	No.	No.	No.	No.	No.	No.
Farm machinery Modena eggio Emilia	20	1	1		11	11	1
Textile clothing Carpi	0	100		10	1	1	
Shoemaking machinery Bologna	20	212		0	1	2	
Footwear San Mauro ascoli		0	1				1
Total			2	10	2	0	

Table 8 – Geographical diversification of business groups in the four industrial districts

Industrial district	Number of groups	Number of group firms	within the district	In the rest of Italy	Abroad
	No.	No.	No.	No.	No.
Farm machinery Modena eggio Emilia	20	1	101	1	2
Textile clothing Carpi	0	100	0	1	
Shoemaking machinery Bologna	20	212	2	20	10
Footwear San Mauro ascoli		0	2	2	
Total			2	2	1

The importance of the district group strongly emerges also from tables 6 and 7, respectively exhibiting the industrial and the geographical diversification of the groups detected in the four districts. These two tables confirm that the majority of the firms belonging to the groups under investigation are industrial firms operating in the district reference industry and located within the district boundaries.

Table 9 – Business strategies of ‘district groups’ in the four industrial districts

Industrial district	Number of district groups	revailing strategy		Main advantages of business grouping		
		vertical diversification	horizontal integration	Economies of scale in distribution	Economies of scale in industrial planning	Quality reliability of subcontractors
Farm machinery Modena eggio Emilia	12			✓		
Textile clothing Carpi	1	2	1			✓
Shoemaking machinery Bologna			1	✓	✓	
Footwear San Mauro ascoli		2				✓

Beyond recognising the numeric relevance of district groups, the field survey also allowed us to explore the business strategies of these local group structures. Such strategies, along with the attached main advantages of business grouping, are shown in table 1. In the farm machinery district of Modena and Reggio Emilia, 10 district groups out of 12 adopt a horizontal diversification strategy. District groups entrepreneurs take advantage from the central handling of the commercial distribution function, allowing them to supply several different customers with an articulated range of products often under a single brand. Similar results emerge from the analysis of the packaging machinery district of Bologna, where the prevailing strategy is again horizontal diversification for 10 district groups out of 12. In a district where the technological content of the goods produced is high, district groups exploit economies of scale both in industrial planning and in the distribution phase, the latter often implying after market presence abroad. A different story emerges in the other two districts under investigation, where the prevailing strategy of the district groups detected appears to be vertical integration. In particular, in the nit ear and garments district of Carpi the majority of district groups is integrated upwards, whereas in the footwear district of San Mauro Pascoli district groups are also integrated downwards. To explain why district groups in Carpi resort to upward vertical integration, we shall recall that in the last ten years this district has reacted to the aggressive competition of the low labour cost countries by repositioning on a higher quality segment of the market. To guarantee quality and delivery times in a sector where quality standards and speed of execution are crucial, many final firms acquired their sub contractors. Also in San Mauro Pascoli footwear district the majority of district groups is vertically integrated. However, as here district groups are shoe factories of world wide renown, local final firms have integrated both upwards to better control for quality and downwards to monitor distribution and manage sales points. The above analysis suggests that district corporate grouping alters the traditional organisation of the district in districts mainly comprising groups with a vertical integration strategy (Carpi and San Mauro Pascoli), spontaneous co operation along the production *filiere* is replaced by hierarchical relationships by contrast, in districts where groups have a prevailing horizontal diversification strategy, we observe a growing concentration of the district output, while the degree of hierarchisation along the production *filiere* remains unchanged¹.

¹ We owe an anonymous referee the suggestion to perform the above analysis on the effects of business groups development strategies on the district internal organisation.

Last, before passing on to the more qualitative results of the field survey, we believe it is important to give a measure of the extent of business grouping in our four districts. In particular, taking the view that the group is the relevant unit of analysis¹, we can assess the degree of industrial concentration generated by the district groupification simply by relating the employees of the largest groups¹ of each district to the total number of district employees. Of course, in order to obtain a correct measure of industrial concentration, of the groups considered only the firms operating in the district reference sector and located within the district boundaries have to be taken into account.

Table 10 – Employee structure and concentration indexes in the four industrial districts

Industrial district	Total district employees	Share of employees in firms with 20 employees	Share of employees in firms with 10 employees	Share of employees in firms with 200 employees	Industrial concentration indexes	
		C4	C8	C4	C8	
No.						
Farm machinery Modena - Reggio Emilia	. 1	1 .	.1	.	.	.2
Textile clothing Carpi	11.02	.	1 .2	.1	.	.2
Shoemaking machinery Bologna	.2 1	10.	.	.2	.	.1
Footwear San Mauro - Forlì	2. 20	2 .	.1	11.	.	.

C4 and C8 are respectively the share of the employees of the first four groups and of the first eight groups over total district employees. The employees of the group firms located either outside the district or not operating in the district reference sector are disregarded in the calculation of these indexes.

Table 10 shows the industrial concentration indexes built using the largest four and the largest eight groups in the industrial districts of interest. With the only exception of Carpi, the data show that the districts are highly concentrated, spotlighting a significant departure from the original district nature. In the farm machinery district of Modena and Reggio Emilia, for instance, the employees of the first four groups account for about two thirds of the district employees, those of the first eight groups almost reach three quarters of total employees.

4.4 The findings: determinants of business grouping

In the last few years district firms, just like all other enterprises, had to reorganise and grow in order to face the increasingly intensive transformation of rules and arrangements marking international competition. In the four districts taken into account in our field study, this process of growth has led both to greater product differentiation hence more horizontal integration in order to broaden the product range and to an increased attention to quality, which has often meant vertical integration upstream for

¹ The reason for such a choice is explained both in the Introduction and in Section 2.2, where we report the results of a comparison made in the field survey between firms in group and independent firms.

better quality control on semi finished products and components and do nstream to ensure better control of sales channels¹. In other words, in order to be competitive at international level district firms rearranged operations so as to operate on a larger scale and with stronger integration of production processes.

The interviews that were carried out during the field study highlighted the choice on the part of district businessmen to spur growth mainly via the business group device and revealed the motives behind this decision. In particular, the choice to expand through the group model has depended and depends both on general factors and on other factors linked with the specificities of the industrial district as such. The former include labour law trade union representation rights are subject to a size threshold of 15 workers, tax considerations such as the constitution of a holding company in a country offering tax breaks, the accommodation of the need to bring relatives and employees into the ownership structure, and the opportunity to separate corporate activities from personal often real estate properties.

The field survey found other, more specific motivations as well. The enlargement towards the group form can take place either by the formation of new companies or by the acquisition of existing firms. Both avenues were found during the field study. In some cases, having decided to expand generally in the same product line or in related products, either upstream or downstream, the firms of a district founded one or more new companies in the same district rather than simply expanding the size of the existing firms.

The entrepreneurs interviewed explained that this option was taken in order to repeat a tested organisational model, i.e. that of the small enterprise. However, it was in the case of external expansion, i.e. expansion by acquisition which we found to be the most common, that firms membership in a district had the highest impact on their way of growth. Thanks to thorough familiarity with the other firms in the district competitors, suppliers and customers, the district entrepreneurs could acquire businesses with sure knowledge of their characteristics, with no need for the intercession of an investment banker not always reliable and always costly. The mutual familiarity of the firms within each district and the relationships of trust built up between businessmen which the literature correctly considers to be the fundamental element in the very formation and development of the district Laerson and Lorenzoni, 1997 turned out to be decisive factors in many of the corporate finance operations undertaken by district firms. In most

¹ In terms of employees.

¹ Similar patterns of evolution for district firms are observed by Innocenti (1997) and Aniccia (1997).

cases, the acquisition was not followed by the merger of the purchaser with the acquired company. In order to preserve a brand name or to leave the management of the acquired company intact, or in the desire or necessity to leave a stake in the company to the seller, the acquired company was left in existence albeit with a totally or significantly renovated ownership and became part of the group headed by the purchaser. The fact that external growth strategies were often carried out within the district led to the formation of district groups.

The evidence here presented gives substance to the quantitative importance of district groups documented in the field study and suggests that the district group is one of the organisational architectures that district firms prefer to face international competition. For the district group combines the large scale of operations and the central handling of such functions as production, distribution and finance with the flexibility of small legal firms, one of the unquestioned strengths of Italian districts and of Italian local capitalism in general.

The changing nature of industrial districts

The empirical analysis presented in this paper has shown that the extent of corporate grouping within the industrial districts under investigation is very significant. The analysis has further ascertained that the nature of such groups is by no means homogeneous and that their formation can be ascribed to a number of different factors. In this respect, the taxonomy introduced in Section 3 is helpful for understanding both the nature and the role of business groups in the evolution of the district organisation. The pseudo group, which comprises one single industrial firm, is essentially employed to separate the owners' main economic activity from their additional wealth real estate or other, showing in any case the financial sophistication achieved by district entrepreneurs.

The conglomerate group highlights the entrepreneurs' activism and ability to diversify investments, possibly enhancing their bargaining power within the district competitive process. From the point of view of the evolution of the organisational structure of the district, the most important type of group identified during the field study is the district group, composed of a plurality of firms located within the district and operating in the district reference sector. The field study has spotlighted its widespread presence, showing that the district group can be considered as the main organisational form chosen by district firms in their process of growth. Finally, the international group is a group with a

strong international orientation. In many cases, it is simply a former district group which has expanded abroad and often it can be regarded as a true small multinational enterprise. It is important to note that corporate grouping and, more specifically, district grouping is widespread not only in industrial districts characterised by the presence of large firms (Bologna, Modena, Reggio Emilia, San Mauro Pascoli) but also in the textile district of Carpi, still characterised by a low degree of industrial concentration.

While all group forms affect the district configuration, the presence of district groups directly changes the internal organisation and thus the governance structure of the industrial district since it affects the degree of industrial concentration and the degree of hierarchisation of the district. The prevalence of one of these two effects depends on the type of development strategy adopted by district groups, i.e. vertical integration or horizontal diversification. Our analysis has brought to light that within traditional districts such as Carpi and San Mauro Pascoli groupification produces an increase in the degree of hierarchisation of the district via the substitution of the traditional cooperative relationships between sub-contractors and final firms so well described in the literature on industrial districts with ownership relationships which are by definition hierarchical. By contrast, in the industrial districts of Bologna and Modena Reggio Emilia where groups mainly adopt a horizontal diversification strategy, the prevailing outcome of groupification seems to be an increase in the level of industrial concentration.

The empirical identification of the district group as a key form of business organisation in industrial districts raises several theoretical issues of considerable importance. First, it is worth noting that the concept of industrial district generally employed in the Italian literature is slightly different from that commonly attributed to the tradition dating back to Marshall (1920). As a matter of fact, this term applied to the third Italy describes a somewhat different type of organisational structure. In particular, this term indicates a higher degree of cooperative coordination than could be present in a Marshallian industrial district. Product differentiation rather than price is the dominant competitive characteristic. Specific idiosyncratic knowledge is central to firm performance and competition is limited to certain spheres of activity in which firms might be expected to develop distinctive competencies (Langlois and Robertson, 1995, p. 12). Moreover, the relations within the district are not only deemed to be informal but also based on equal rights, thus precluding the possibility of hierarchical relations. Coordination of the activities among different district firms is achieved through market transactions, but even so interaction mechanisms including social interactions based on

trust, reputation and co-operation play a major role (Dei Ottati, 1999). In such a theoretical framework, the industrial district shapes up as a production arrangement characterised by a high degree of co-ordination and little if any ownership integration. The emergence of organisational forms based on ownership linkages, hence greater concentration of ownership and control, is altering these traditional arrangements, gradually replacing the old mechanisms of competition and co-operation with others based on more formal and stable relations.

Secondly, our results on the relevance of district groupification allow us to take part in a theoretical discussion lively debated within the district literature that on the prevalence of the systemic nature of the district or of the centrality of the single firm as unit of analysis. In this literature two different approaches can be identified: a system-centred view and a firm-centred view¹. Behind the first approach, there is the idea that the district works as a complete evolutionary system, where the integration between firms is mainly achieved by means of a mix of automatic mechanisms based on both market competition between firms belonging to the same stage of the production process and cooperative behaviours between firms belonging to different stages of the *filiere*. In this perspective, mainly developed by Becattini and Brusco within the traditional theory of industrial district drawing back to the seminal contribution of Marshall, little room for the strategic behaviour of firms is left. Recently, Ferrucci and Araldo (2001) have proposed a new approach to analyse the pattern of evolution of industrial districts. They suggest that the appropriate unit of analysis of a district is the district firm and that the district firm strategic behaviour is the key variable for the analysis of an industrial district and for the understanding of its pattern of evolution. Our point of view is close to Ferrucci and Araldo's. We have emphasised the role of business strategies and hence of the strategic behaviour of district groups in the process of evolution and transformation of an industrial district. This does not mean that the district as a system does not matter. On the contrary, the district constitutes a favourable environment stimulating the formation and development of district groups. In this sense, the district group represents both an element of rupture with respect to the traditional organisation of the district and a factor of continuity with the district's traditional *modus operandi*.

Finally, it is worth analysing the policy implications of our investigation. It is useful to start from the actual experience of industrial policy in Emilia Romagna since the late 1980s. As we know, regional policy makers have generally designed industrial policy having

¹ See Hitchford (2001) for an extensive description of the two approaches.

the industrial district or the local system of small and medium size firms as the reference organisational model. Just consider the Ervet system centres, conceived from the outset as centres to support small businesses with the provision of real services (Bellini *et al.*, 1990; Manolis, 1998). Our findings show that the small juridical size of individual firms making up these local systems is only one of the variables to consider in designing the industrial policy programs. The high extent of corporate grouping even detected among the smallest size firms certainly suggests that firm ownership is concentrated in a lower number of controlling owners. One possible implication is that the fragmentation of organically unified enterprises into a large number of legally independent firms may result in a concentration of policy benefits on a lower number of actual beneficiaries. In addition, as juridical size is often an essential factor in determining who is eligible for a given benefit, the district group form may permit circumvention of size ceilings. That is, corporate grouping could distort the allocation of public resources within a district to the disadvantage of small independent firms.

Conclusions

The industrial district is traditionally viewed both as one of the most interesting peculiarities of the Italian industrial system and one of its main strengths. Yet, in recent years faith in the role of industrial districts has wavered somewhat. While some scholars notably, Becattini and Brusco continue to believe in the district, many others wonder whether this form can cope with the challenges of globalisation, or whether it is doomed to decline. Our paper has revealed that the question is ill put. District firms are still operating successfully in Italian and international markets. Nevertheless, over time industrial districts have been subject to a transformation process which radically altered their characteristics.

Within industrial districts today we find the coexistence albeit with relative weights that differ from case to case of traditional arrangements with other, hierarchical mechanisms depending in many cases on the presence of business groups. During our field study we have identified corporate groups, of which several are medium or large size and three comprise a listed company (Ema, Ima and Sasib Cir). Significantly, many of these groups are the product of a process of growth involving district firms. That is, many of the districts large enterprises in the economic acceptance started out twenty or more years ago as small firms. This result offers a new interpretation to the issue typical of the literature on industrial districts (Ceseri, 2000) of the interaction fruitful or otherwise

between small district firms and large firms, the latter always being considered as external. As we have seen, many of the large enterprises operating today within districts are actually the result of an on going growth on the part of district firms themselves and should thus properly be considered internal. In our view, the decade old observation of Bianchi and Gualtieri (1990) on the Emilian model is perfectly suitable that takeovers have been the growth device for local enterprises and that this has been accompanied by the creation of group configurations that tend to remain unaltered in legal and operative standing, whilst still guaranteeing the control of functions considered to be strategic (Bianchi and Gualtieri, 1990, p. 100).

Next to these findings, the paper has further shown that one particular form of business group specific to industrial districts – the district group – is very common and plays a key role in the economy of district areas. From one point of view, their existence deeply alters the nature of the district, but from another standpoint they are a powerful element of continuity. On the change side, the substantial presence of corporate grouping suggests the existence of a process of hierarchisation of the economic relationships among district firms. On the continuity side, the function of the industrial district, and of the forms of local capitalism shaped by industrial districts, stands confirmed and highlighted as the source of skills and abilities producing a competitive edge for district firms and prompting entrepreneurs to expand within their district.

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