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Areas of Large Enterprise and Industrial Districts in the Development of Post-war Italy: A Preliminary Survey

GIACOMO BECATTINI & FULVIO COLTORTI

Faculty of Economics, University of Florence, Italy

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ABSTRACT *Our aim in this article is to lay some statistical and theoretical foundations for an understanding of Italian post-war economic growth, by devoting special attention to what has happened in the hundred different "Italies" that go to make up the mosaic of this country. We have concentrated our analysis on comparing "areas of large enterprise" with "industrial districts" through a distinction between district provinces (IDPs), large enterprise provinces (LEPs) and other provinces (OPs). We investigate manufacturing industry by means of in depth analyses of trends in employment and value added, as well as through breakdowns of export flows and income and prosperity levels. Since the end of World War II it appears that Italian economic growth has largely been formed by the constant, massive flow of exports of personal and household goods and light mechanically-engineered products, that a sizeable flow of exports is attributable to growth in the industrial districts, and that although the income gap between the different parts of the country has not been eliminated, growth by the industrial districts and the policy of industrialization in Southern Italy have together engineered a major territorial dispersion of both light and heavy industry. However, heavy industry and high-tech large Italian companies have found increasing difficulties and even lost many of the positions they once held. Our survey indicates that a policy for industrial development in Italy must take account of the weakness of the heavy industry sector along with the features and requirements of industrial districts.*

> *. . . fino al punto di dire che la città sia l'unico principio per cui possano i trenta secoli delle istorie italiane ridursi a esposizione evidente e continua. Senza questo filo ideale la memoria si smarrisce nel labirinto delle conquiste, delle fazioni, delle guerre civili e nell'assidua composizione e scomposizione degli stati.*
> . . . to the point where we may say that the city is the only principle according to which the thirty centuries which make up the histories of Italy may be reduced to the status of clear, continuous exposition. Without this ideal line of descent,

Correspondence Address: Fulvio Coltorti, fulvio.coltori@mediobanca.it

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memory becomes lost in the maze of conquests, factions, civil wars, and the diligent construction and deconstruction of states.
Carlo Cattaneo

Introduction

The growth of the Italian economy since World War II has been charted in considerable depth from both an economic and social historical perspective. Economists in particular have invented or adapted various theoretical models to explain the country's development, in order to derive pointers for economic policy.

Many of these studies have several features in common: they start with the assumption that the only triggers for growth were accumulation of capital and technological progress, and, with regard to the Italian situation in particular, assess events in the light of whether or not these two triggers were present at different times and in different regions. For a long time the focus of such research was the so-called Italian "economic miracle", which some ascribed to the low cost of labour, others to good economic policy-making, others to an explosion of entrepreneurialism, and so forth.

Another widely-debated theme was the contrast between the typically capitalist growth mechanisms present in the Centre-North of the country, starting with the so-called "industrial triangle", and the weakness, or absence, of such mechanisms in the Centre-South. At this stage in the analysis, the world of small enterprise, which has always played such a large part in Italy's productive system, was treated as a sign of backwardness, or a mere corollary (whereby phases involving activities that were easy to control and provided low financial returns were decentred) to the world of large enterprise, which was the only one that really mattered.

It has only been since the end of the 1970s that scholars have begun to see "industrial districts" as a possible answer to the problems posed by international competition, as an alternative to large corporates operating in heavy, technologically-advanced industries, and started to look at the data in such a way as to pay more attention to what is going on in the world of small and medium-size enterprise.

Since then, research on Italian economic growth has gradually begun to change in character. First, scholars have started to appreciate that there were not just two Italies, as dualist models suggested, but at least three. Between the industrial triangle and the depression of the South, there has been shown to be a third Italy in which industrial districts proliferated. It is these above all, which by exporting a myriad of personal and household products and their related instrumental goods, often disdainfully referred to as mature and traditional, have done most to shore up our balance of payments since the end of the economic miracle.

It has taken several years of theoretical and political debate for these conclusions to be partly or wholly accepted by students of the Italian economy, not to mention the nation's politicians. Assuming that they are now more or less accepted, the problem accordingly becomes one of how to rewrite the history of Italian postwar industrialization in coherent fashion.

In this article we do not claim to have met this need exhaustively. Our objective is merely to lay some statistical and theoretical foundations for the kind of reinterpretation that is required. In particular, we will show how the proliferation of small manufacturing industries which has been such a feature of the postwar years in Italy is not as pathological as some scholars claim and some politicians seem blithely to assume, although it had and continues to have pathological aspects to it. Rather, it is a phenomenon which meets all the laws of economic growth in a country, if we do not remain at the level of purely technical data and company-based perspective but widen our view to include the socio-cultural backdrop against which productive activity takes place.

The specific viewpoint and distinguishing feature of this article is the special attention it devotes to what has happened in the hundred different Italies that go to make up the mosaic of this country. One could also say that we are attempting to take Italian industrialization back to the land itself, where "land" is not to be understood in a narrowly naturalistic sense but more as a type of human construction, as the nineteenth-century Lombard thinker Carlo Cattaneo understood it. In other words, the true key to this article lies in the comparative and interdependent development of Italian localities. However, in order to make our findings comparable with more typical studies of Italian industrial development, which normally refer to sectorial or company growth, we will endeavour, in interpreting Italian industrial development in local terms, to link it with more familiar accounts of industrial and, where appropriate for large-scale enterprise, company development. The main aim of our work is to compare the respective performances of localities where large enterprise (LE) is concentrated and those representing so-called "industrial districts" (IDs). By LE, what we mean is a complex company entity which is able as a result of its size to leave a mark on the immediate surroundings in which it operates, i.e. markets, local environment and institutions. By an ID, what we mean is an entity which brings together a community of persons and industrial enterprises in a circumscribed territorial area that is naturalistically and historically determined.

Given that it is not possible to compare the growth of LE (companies) and IDs (areas) with any precision, and in the conviction that part of the productivity of labour at any rate derives from the coherence between the localized productive system (whether LE, ID or any other) and the local community, which provides its social climate and human factor, we have concentrated our analysis on comparing "areas of large enterprise" with "industrial districts". Areas which are clearly not either LE or ID have been classified as "others". These are often to be treated as marginal to the processes of industrialization, but do still require some distinctions. The figures themselves have also encouraged us to distinguish areas of low industrialization within the LE category.

The most efficient way of dividing up the country into economically meaningful units is that adopted by the Italian statistics office ISTAT for its "local working systems", which led directly to the identification of "industrial districts" and which, despite its limitations, would have represented a useful starting point for our survey. Unfortunately it proved unworkable, because the division did not provide an adequate range of statistical information for analysis aiming to cover the entire post-war period.

Instead, given that a rich crop of good-quality data was available at the provincial level, we decided to use the province as the basis for our work. The number of provinces has changed over the timeframe covered by our analysis (1951–1996), so we have restated some provincial figures to make them comparable to the original 1951 division.[1] This obviously means the results obtained are less meaningful, but not to the extent, we trust, of altering them significantly.

The next step was to classify the provinces according to their primary nature.[2] We therefore introduced a distinction between industrial district provinces (IDPs), large enterprise provinces (LEPs) and other provinces (OPs), using the degree of industrial manufacturing employment as the distinguishing feature. The nature of each province was therefore decided on the basis of whether most workers were employed in LEs or an ID, and this was established on the basis of the number of staff employed in local industrial units attributed to one or other of the two categories. The provinces were treated as districts when the percentage of total staff employed for such purpose was higher than the corresponding national average. The same criterion was used in assessing whether or not a given province should be viewed as an LEP, with the proviso that a given unit had to contain at least 500 employees in order to be treated as such.[3] OPs, obviously, are those which do not fall into either of the previous two categories.

However open to question such an approach may be, the reason for it is to identify the primary nature of the manufacturing apparatus in each individual province, especially in the light of the distinction, essential for our purposes, between small and medium-size companies typical of IDs and those in LE areas.[4]

For the purposes of our study, we have used figures from the national censuses carried out between 1951 and 1996 by ISTAT, made comparable wherever possible.[5] The method we followed for the most part led us to identify the various provinces as belonging to a single category, with a small number of provinces that were "mixed" between the LE and ID categories (three). There were also provinces where manufacturing employees were typically employed in LE, but in which growth in income was not primarily attributable to the industrial component, e.g. as a result of tourism, or the size of grants and other resources transferred from the central public administration, etc. Such provinces were therefore defined as "low-industrialized" LE provinces (LILEPs). Industrialization was treated as low when the share of value added generated by industry in the narrow sense was significantly (i.e. more than 15%) below the national average.[6]

This method of distinguishing between companies implicitly assumes that all small and medium-size manufacturing enterprises in the district provinces are part of or in some way linked to the district *filière*, and that the small and medium-sized companies in the other areas belong either to the LE apparatus, or are, so to speak, "free". This is reflected in a sub-division, essential for our purposes, of the populations of small and medium-size enterprises into district areas, sub-providers for LE, and others.

We fully appreciate that some might question these criteria, and are more than willing to re-examine the figures in the light of conventions that prove to be more satisfactory. But we remain confident that while the framework of conclusions might change, the whole would still stand. We therefore trust that, at this level of analysis at least, the conventions we have adopted correspond adequately to the aims we have set.

Results

Trends in LEPs and LILEPs

Table 1 lists the number of Italian provinces based on their prevalent nature. Over the 45 years under review LEPs grew steadily from 24 to 36. In 1951 there was just one LILEP, as against 11 in 1996. The survey begins in 1951 with a total of 24 units, concentrated in the industrial triangle between Milan, Turin and Genoa, with some expansion into Tuscany where Livorno had mechanical engineering and iron and steel industries, and Triveneto, with large shipbuilding focused primarily at Trieste and Gorizia. There were also two other centres in Terni, home to the electric/steel-making company of the same name, and Naples, where LEPs focused again on mechanical engineering and steel. The situation in 1961, with the economic miracle now nearing its end, was largely unchanged, but there

Table 1. Breakdown of Italian provinces according to prevalent nature (number of provinces[a])

	1951	1961	1971	1981	1991	1996
LEPs	23	22	23	25	23	25
LILEPs	1	2	3	8	10	11
IDPs	4	8	14	18	27	28
Mixed provinces (LEP and IDP)	—	1	—	—	—	2
OPs	64	61	53	42	33	31
Total[b]	92	92	93	93	93	93

[a]Changes from 1951 to 1996: LEPs + 2 (balance between 15 former OPs, 2 IDPs becoming mixed, 13 LEPs becoming OPs, 3 former LEPs becoming IDPs, plus the new province of Pordenone since 1968; LILEPs +10 (balance between 13 former OPs and 3 LEPs becoming OPs); IDPs + 24 (21 former OPs plus 3 former LEPs); OPs − 33 (2 new LEPs, 10 new LILEPs and 21 new IDPs, less former LEPs and LILEPs becoming OPs).
[b]Pordenone included as from 1971.
Source: Authors' own calculations.

were two significant additions: Ravenna, where ENI concentrated its new chemical business, and Syracuse, where Edison subsidiary Sincat built its main petrochemical centre in the 1950s. However, if the number of LEPs changed very little over the 10 years, there was a big difference in the number of manufacturing staff employed in the two major industrial centres, with a 36% increase in Turin and a 33% rise in Milan, both cities attracting huge amounts of labour from the rest of the country. Genoa, meanwhile, lost ground. The industrial pole at Naples also expanded notably, by some 33%. The aggregate increase in employees in LEPs on a like-for-like basis between 1951 and 1961 was slightly below 30%.

There were further significant developments in the next decade. State intervention in southern Italy resulted in six new LEPs: Caltanissetta, Chieti, L'Aquila and Taranto plus Brindisi and Caserta, which qualified as LILEPs largely on the back of the petrochemical (Montecatini and ENI/ANIC), steel (IRI/Italsider)[7] and electronic (IRI/Stet) industries. But there were also important developments in central Italy in the shape of Frosinone and Latina, whereas in the North Pordenone began to emerge as a major centre for production of domestic electric appliances.[8] Asti too was included for the first time, although its presence was short-lived.

Milan and Turin, the two largest LEPs, reached their all-time high in terms of employment in 1971, with increases of 7% and 19% respectively compared with 10 years previously. However, the provinces of Bergamo, Vicenza, Ravenna, Bolzano, Brescia, Sondrio and Pisa all disappeared from the list, although the latter returned to LEP status in 1991. Lucca became a mixed province (LEP and ID), while Brescia and Vicenza began to take on more district-based identities. Bergamo too eventually became an industrial district, but only in 1991. To summarize: in southern Italy the government's interventionist policy looks to have had some success, but in the north various historic LEPs disappear due to the proliferation of small "independent" enterprises, as well as to the diminishing importance of their large-scale industries.

The 1971–1981 period saw a further increase of around 12% in manufacturing staff employed in LEPs, but this time the increase was more widespread. Some nine provinces moved towards inclusion as LEPs, five of which were in the south, namely Cagliari, Campobasso, Foggia, Nuoro and Palermo. To these were added, in the centre-north region, Cuneo, where the food and textile/clothing industries expanded, Belluno, which saw growth in mechanical engineering, Pisa, following expansion by Piaggio which is based at Pontedera, and Rieti, where a pole of manufacturing settlements was formed with the help of subsidies for developing southern Italy.

The decade between 1981 and 1991 covers a crucial stage in the restructuring of large enterprise. New aspects to emerge from our study include the provinces of Rome[9] and Lecce becoming LEPs for the first time, and a major reduction in the numbers of staff employed at the historic provinces of Milan, down 18%, and Turin, down by 21%. Indeed, staff employed in these two provinces together were by this stage almost 25% lower than the high recorded in 1971. The Neapolitan pole also began to dip, returning to its 1961 level, whereas Genoa too reduced to less than two-thirds the level recorded 40 years earlier. All of southern Italy apart from Calabria seems by this stage to have been rallied by subsidized industrialization.

The picture is completed with the 1996 census. In southern Italy the provinces of Avellino and Potenza have become LEPs, albeit low-industrialized, by virtue of the new Fiat plants located in Melfi and Pratola Serra which came onstream in 1994 with Japanese-style "lean production", while in the north, apart from the return of Bolzano which, along with Rome, is the only LILEP not located in southern Italy, there are two major new arrivals in the shape of Alessandria and Ferrara.[10] Conversely, the failure of Sardinian industrialization is clearly illustrated by the return of Cagliari and Nuoro to the status of OPs,[11] matched by the "relegation" of Matera in Basilicata following the downsizing of the fibre pole set up by ENI during the 1960s. Also worth noting is the fact that the province of Venice has lost its status as an LEP after many years as a major petrochemical and steel industry centre.

When taken as a whole, the years between 1951 and 1996 reveal two key features: on the one hand, there is a clear territorial expansion by large-scale industrial companies, with ample involvement by provinces located in the centre-south, Sicily and, albeit briefly, Sardinia (see Figures 1 and 2); on the other hand, the employment trend follows a kind of inverted U-shape, with major increases until 1981 and comparable reductions in the years thereafter.

However, in relative terms the contribution of LEPs has reduced considerably: (a) manufacturing staff employed by LEPs fell from 52% of the national total in 1951 to 39% in 1996; (b) the share of industrial value added by the same category of provinces decreased from 60% to 42% (see Table 2 and Figures 3–5). So overall the LE has weakened, despite its territorial expansion.

Trends in IDs

The first post-war census in 1951 records the presence of four major aggregates of small companies in the neighbouring provinces of Ascoli Piceno and Macerata (footwear and leatherwear), Siena (furniture) and Modena (mechanical engineering and clothing).[12] These now strike us immediately as IDs, but in those days no-one perceived them as such.

The first wave of provinces to be considered (today at least) districts came together in 1951–1961. Emilia Romagna had Reggio Emilia (agricultural machinery, textiles and clothing), and Tuscany Florence (textiles) and Pistoia (footwear), although Lucca, which previously had been a LEP, now became mixed, at least temporarily. The size of

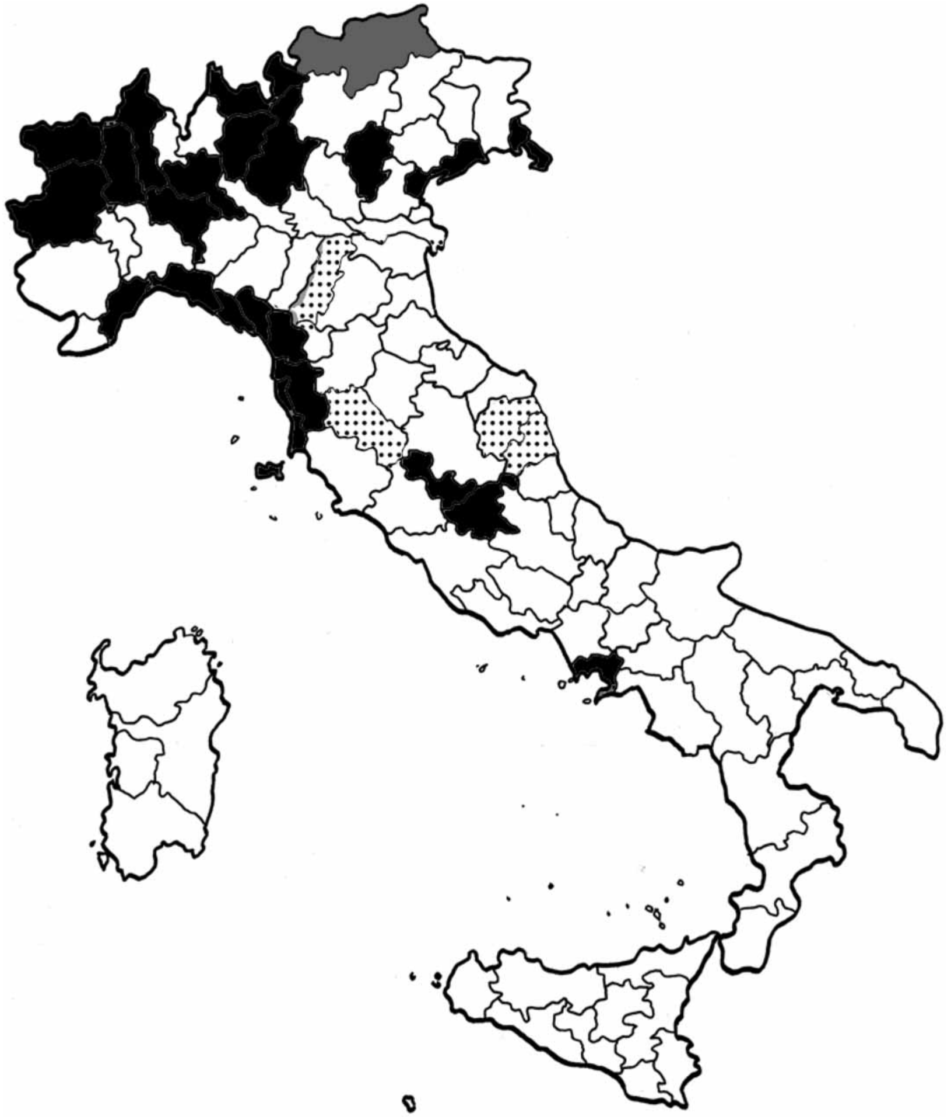

Figure 1. Italian provinces in 1951: LEP = black; LILEP = grey; IDP = dotted

IDPs in terms of numbers of staff employed had increased by more than five times (see Table 3), but this still only represented around a sixth of the total employed in LEPs.

The 1961–1971 period saw notable growth in the district form, both in terms of territorial expansion and numbers employed. In Lombardy, Brescia (previously LEP, textiles and clothing, metallurgy, knives and taps/fittings), Como (silk, furniture and metal) and Mantua (textiles and knitwear, footwear and metalwork) all became districts, as did Treviso (furniture and sports footwear) and Vicenza (former LEP: gold, leather, etc.) in Veneto, and Pesaro and Urbino (furniture) in the Marche. In Tuscany, the province of Lucca ceased to be a LEP once and for all and became a district (paper and paper technology)

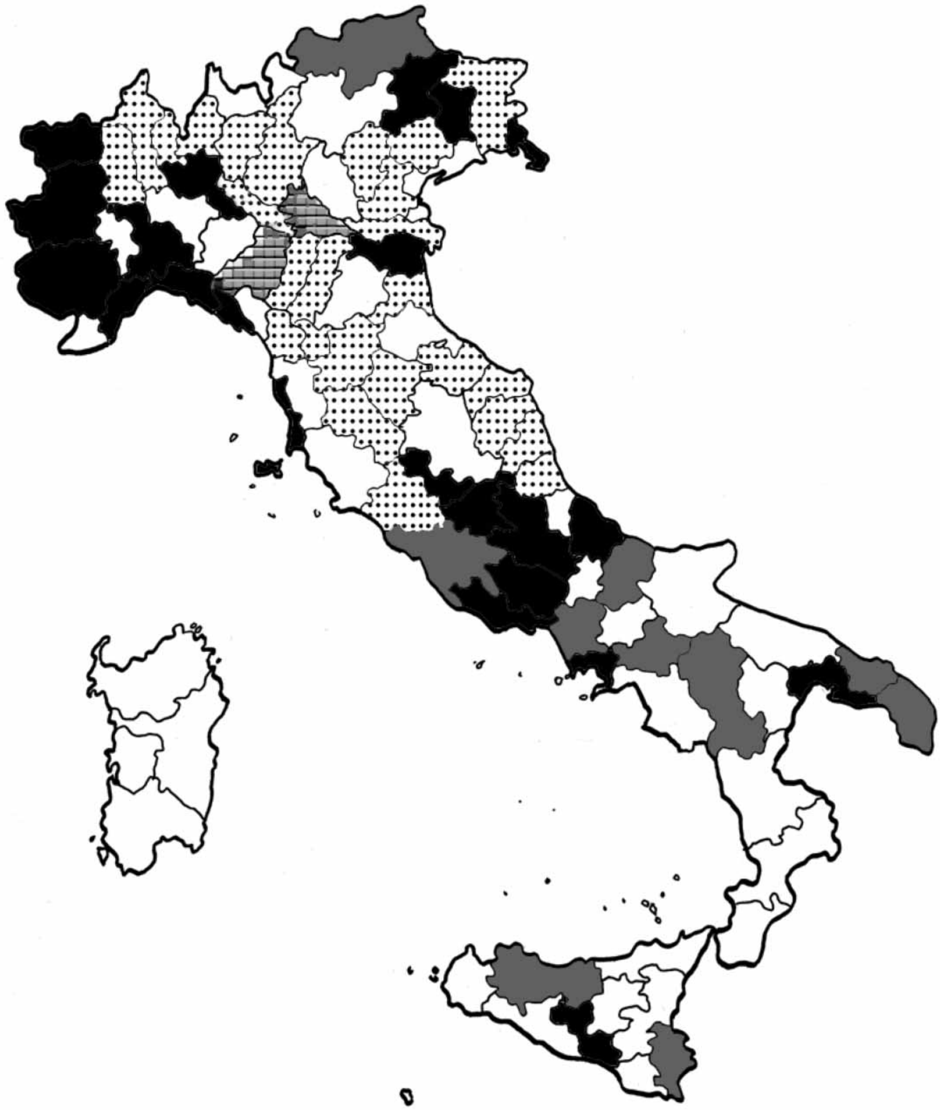

Figure 2. Italian provinces in 1996: LEP = black; LILEP = grey; IDP = dotted; mixed LEP/IDP = hatching

(Becattini, 1966; Becattini, 2001, pp. 63–69). By 1971 IDPs accounted for almost a fifth of both staff employed and value added.

Between 1971 and 1981, Rovigo in Veneto (textiles and clothing) ceased to be an ID, while Arezzo (gold, furniture) was added to Tuscany's cluster of districts. In Emilia Romagna, Ravenna (mechanical engineering and food) moved from being an LEP in 1961 to become an IDP, and the group of IDs in the Marche was completed with the addition of Ancona (mechanical engineering, textiles and clothing). IDs now accounted for over a quarter of the system.

Table 2. Summary of Italian provinces according to prevalent nature: manufacturing employment and value added

	1951	1961	1971	1981	1991	1996
As percentage of total manufacturing employees						
LEPs	51.9	50.3	39.8	36.0	31.4	31.9
LILEPs	0.6	0.8	1.2	3.3	6.7	7.2
IDPs	2.1	8.2	19.3	24.7	41.8	43.9
Mixed provinces	—	0.8	—	—	—	2.3
OPs	45.4	41.5	39.7	36.0	20.1	19.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
As percentage of total manufacturing value added						
LEPs	59.7	51.1	43.8	37.9	33.9	34.0
LILEPs	0.4	1.0	1.1	3.5	8.3	8.4
IDPs	1.5	7.5	17.8	24.5	38.1	40.2
Mixed provinces	—	0.6	—	—	—	2.1
OPs	38.4	41.0	37.3	34.1	19.7	19.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' own calculations based on figures compiled by ISTAT and Istituto Tagliacarne.

The 10 years between 1981 and 1991 produced more major changes, with nine new IDPs being formed. In Lombardy there were Bergamo (metal-working, textiles and clothing) and Cremona (both formerly LEPs), along with Varese, to which should be added Novara and Vercelli in Piedmont. In the Triveneto region both Padua and Udine emerged as districts (furniture and footwear respectively), as did Parma in Emilia-Romagna (food). Meanwhile, Teramo (clothing) gave the first sign that the phenomenon

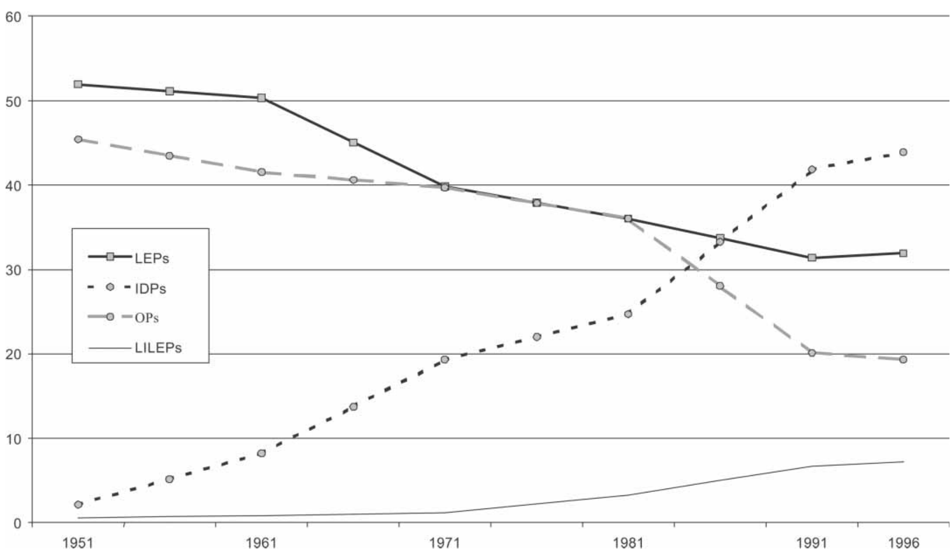

Figure 3. Italian provinces: percentage shares of total manufacturing employees

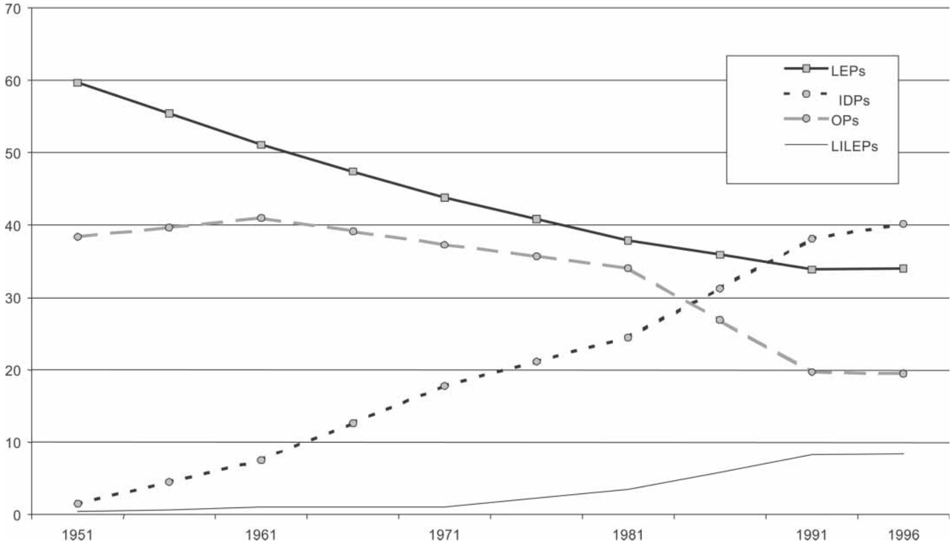

Figure 4. Italian provinces: percentage shares of total manufacturing value added

was extending to southern Italy too.[13] Changes until 1996 were marginal, when Viterbo was the first province in the region of Lazio to become a low-industrialization district[14] (ceramics), while Parma and Mantua became both LEPs and IDPs on the back of growth by food companies Parmalat and Barilla, mechanical and steel groups CIR and Marcegaglia, and clothing enterprises (Golden Lady and others in the knitwear and footwear segments), in addition to the ongoing performance of the textile district.

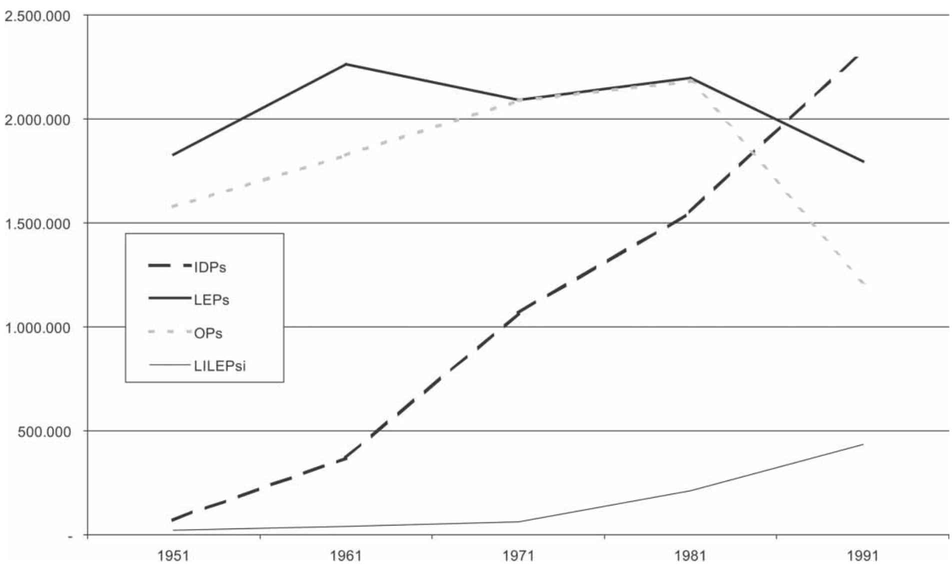

Figure 5. Italian provinces: total staff employed at local industrial units

Table 3. Number of manufacturing employees by province (in 1000 of staff employed at local industrial units)

	1951	1961	1971	1981	1991
LEPs	1,828	2,262	2,091	2,197	1,794
LILEPs	21	38	61	213	436
IDPs	72	370	1,068	1,551	2,337
Mixed	—	38	—	—	—
OPs	1,577	1,866	2,089	2,182	1,218
Total	3,498	4,498	5,309	6,143	5,785

Source: Authors' own calculations based on ISTAT figures (1998). The ISTAT database used in this table assumes the same industry classification throughout the entire 1951–1991 period, and is therefore not consistent with that used in Table 2. However, the differences in percentage shares are negligible.

Over the 1951–1996 period as a whole, manufacturing employment in the IDPs rose from 2% to 43.9% and value added from 1.5% to 40.2% (see Table 2 and Figure 3–5). This is admittedly due to the effect of one type of industrial organization, but not just: again between 1951 and 1996, employees in IDPs classed as such in the final year of the survey rose by 85%, compared with 6% in the LEPs, 54% in LILEPs and 53% in OPs.[15] We may therefore conclude that the most significant, widespread growth of all took place in the ranks of the IDPs.

Aspects of Changes in OPs

The number of provinces which are neither LEPs nor IDs fell from 64 in 1951 to 31 in 1996. Their contribution to manufacturing employment fell from 45.4% to 19.3% and to industrial value added from 38.4% to 19.5%.

However, a closer look at the events in such provinces enables us to divide them into at least three groups. First, there are those which during the period become LEPs or IDPs, of which, as mentioned earlier, there were 49. Then there are those which move through the OP category in their passage from one definitive form to another: these include Bergamo, Vercelli and Ravenna (OPs on their way from being LEPs to becoming IDs). Meanwhile, other OPs are classified as such because they have shed one identity without yet assuming another, such as Pisa and Massa Carrara, which were LEPs until 1981, although it is clear that they contain the heart of IDs with their leather, footwear and marble activities, and Matera and Venice (LEPs until 1991), which incorporate district areas in textiles, clothing and furniture. Then there are Cagliari and Nuoro, which were LEPs in 1981 and 1991 only, and Asti, which fleetingly qualified as an LEP in 1971.

Lastly, there is a group of provinces that appear to be irreducibly "other", 22 in total. We can divide these into two groups: there are 16 low-industrialized provinces, and six apparently anomalous high-income/high-industrialization provinces, namely Bologna, Forlì, Perugia, Piacenza, Trento and Verona. It is hard to decide whether this is a statistical oddity thrown up by the conventions we have adopted, or if it is due to shortcomings in the selection of districts carried out by ISTAT.[16] We would merely add that the increase in the number of staff between 1951 and 1996 on a like-for-like basis is 72% for highly-industrialized OPs and 34% for the others.

Typical Growth Paths of Italian Industry

A brief look at those Italian provinces to have changed category gives us an idea—a rough idea, of course, but not necessarily any less significant for that reason—of the most frequent and typical growth paths of individual localities. The basic transformation of all provinces from agriculture, industry and services is beyond the remit of this article, as it would raise a whole host of other problems, and the literature on this subject is vast. Instead, we will be concerned with the typical passages of provinces within the various categories covered by our study.

Eleven provinces over the period covered by our research have retained their status as LEPs, including Milan, Turin, Genoa and Naples, while four provinces (Ascoli Piceno, Macerata, Siena and Modena) have remained IDPs and a further 22 are still "other". This latter category comprises a block of what we might call "hardcore" underdeveloped provinces in Sicily and Calabria, those with a considerable number of medium-size companies (Bologna, Forlì, Perugia, Piacenza and Verona), and those whose identity seems to resist definition (Grosseto, Imperia, Pescara and Trento).

Most movement has obviously been away from OPs, which in 1951 totalled 64, to IDPs, a direction in which 21 provinces travelled including the two mixed provinces plus Viterbo (low industrialization), and to LEPs and LILEPs, a route taken by 12 provinces including two mixed. This trend (see Table 3 for how this affects employment) is a good illustration of industrial development in Italy as a whole, driven on the one hand by private and local government initiative, and on the other hand by central government industrial policy, particularly in respect of southern Italy.

Even more interesting are certain cross-changes from LEPs to IDPs. Whereas seven LEPs became IDPs, i.e. Bergamo, Brescia, Lucca, Novara, Ravenna, Vercelli and Vicenza, we have no instances of IDPs becoming straightforward LEPs. The only comparable instances occur in 1996, with the provinces of Parma and Mantua, which became LEPs but without shedding their identity as IDPs and, more importantly, while remaining in the area of light industry (food and personal/household goods).

Other Aspects

A New Balance Between Heavy and Light Industry

The ISTAT figures also enable us to classify provinces on the basis of economic activity. We have considered three groups of product:[17]

- light industry, comprising personal/household goods (textiles, clothing, leather and leatherwear, wood, furniture) and light mechanical engineering;
- heavy industry, including chemicals, petrochemicals, oil refining, metallurgy, transportation, rubber, fibres and plastics;
- other goods (food, drink, paper technology, publishing, etc.).

In terms of manufacturing employees, light industry remains dominant and relatively stable, losing just two percentage points from 71% of the total in 1951 to 69% in 1991 (see Table 4). Heavy industry rose from 12.5% in 1951 to 20.1% in 1971, before falling back to 15.6% in 1991. Attributing these categories of goods to the three types of province identified earlier confirms the general picture seen thus far. The figures illustrating

Table 4. Manufacturing employees by province and industry

	Light industry	Heavy industry	Others
1951			
LEP	72.6	17.4	10.0
LILEP	70.9	17.1	12.0
IDP	73.9	4.6	21.5
OP	70.0	7.2	22.8
Total	71.4	12.5	16.1
1971			
LEP	57.5	32.0	10.5
LILEP	58.9	28.0	13.1
IDP	80.0	10.4	9.6
OP	71.3	12.8	15.9
Total	67.5	20.1	12.4
1991			
LEP	59.5	25.9	14.6
LILEP	58.5	15.8	25.7
IDP	77.5	10.4	12.1
OP	69.0	10.6	20.4
Total	68.7	15.6	15.7

Source: Authors' own calculations based on ISTAT figures (1998). See note to Table 3.

employment values in absolute terms (Figures 5–7) indicate that overall LEPs expand until 1981, after which they begin to shed staff. IDPs rise steadily, with a marked increase between 1971 and 1991, while the OPs lose a lot of their workforce after 1981.[18] Figures 8 and 9 illustrate the same trends in terms of share of total employees broken down by geographical region. Considering the location of the provinces and their relative

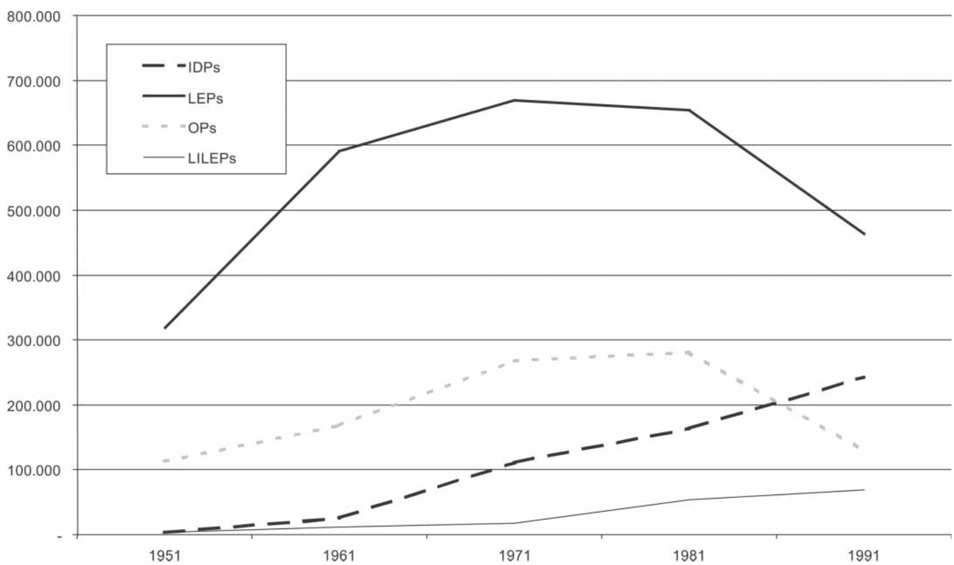

Figure 6. Italian provinces: staff employed at heavy industry local units

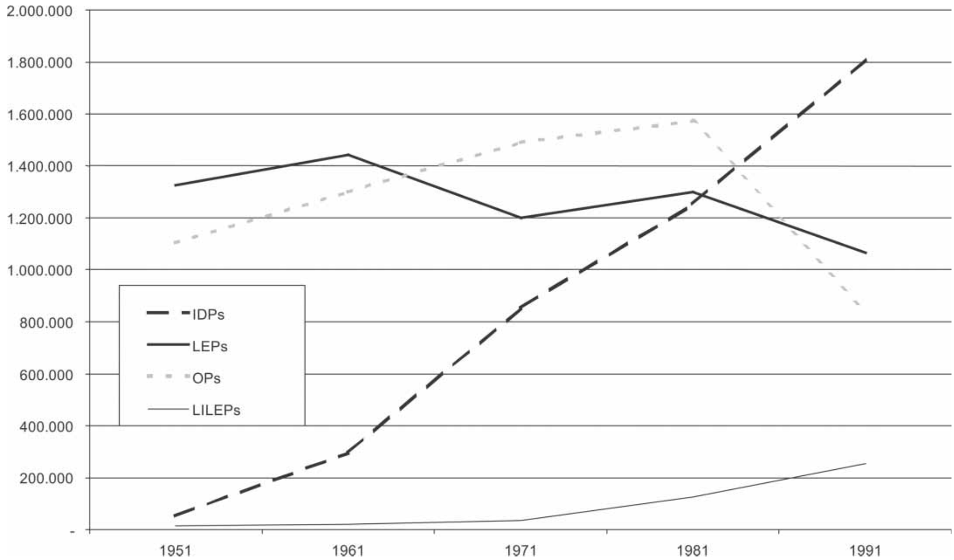

Figure 7. Italian provinces: staff employed at light industry local units

areas of specialization, the trends referred to earlier also highlight a major adjustment to the national division of labour, with marked and ongoing growth in light industry in the area known as the north-east-centre, and a decline in heavy industry in the north-west after 1971.

LEPs tend to feature more heavy, technologically complex industry, but in these areas too light industry seems to prevail, absorbing over 70% of employees in 1951 and around 60% in 1971 and 1991.[19]

Figure 8. Italian regions: percentage share of heavy industry staff at local units

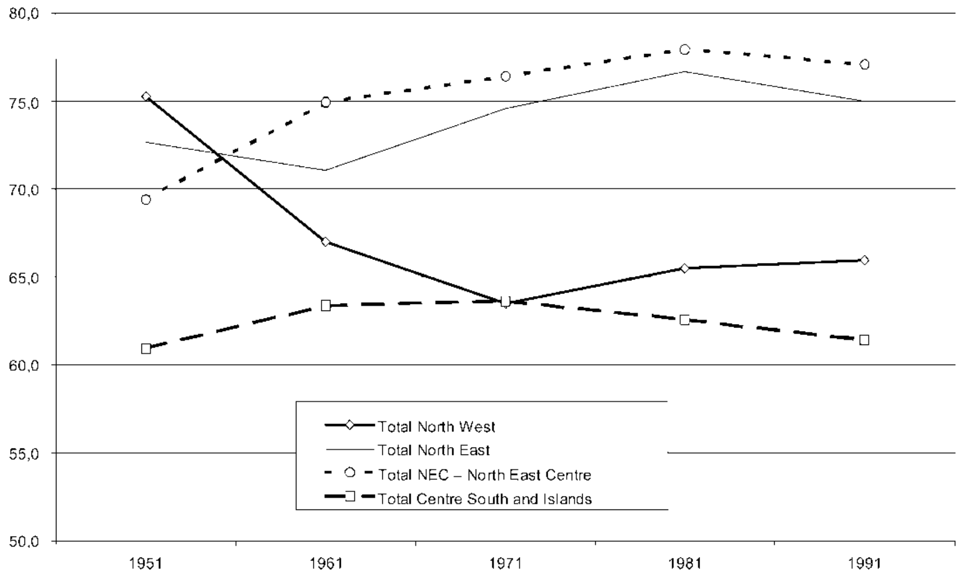

Figure 9. Italian regions: percentage share of light industry staff at local units

Sectorial Changes in Individual Italian Localities

Turning now to the changes that have taken place in the sectorial structure of the different areas we have identified (Table 5), we can see how IDPs have a higher share of value added generated by industry and a correspondingly lower share of value added deriving from other activities, especially service-related. This predominance of industry can be seen as early as the 1951 figures for provinces that would subsequently become districts.

LEPs had a share of industry in 1999 that was eight points below that registered by IDPs, and a contribution from the service sector which was higher by the same amount.

Also worthy of note is the different structure of the provinces within the industrial triangle, where the proportion of industry was 25.7%, compared with 54.7% in 1951, more than four percentage points higher than the figure for the other LEPs, and higher too, obviously, than that posted by LILEPs, which in fact halved during the period under review.

One common feature of LEPs within the industrial triangle is a high share deriving from credit and insurance activities, which at 5.9% was the highest percentage recorded. As is well known, the financing needs of LE are higher than those for small/mid-size companies, and its concentration in large cities can historically be seen as a typical effect of the interrelation between finance and industry, which generates in the latter a need for proximity, including physical, to the institutions disbursing its risk and debt capital. With regard to concentration, the first three provinces account for 58% of total staff employed by LEPs, or 47% of total LEPs plus LILEPs, as against 26% in the case of the IDs.

Activity Rates

A look at the activity rates achieved by populations resident in the different types of province reveals that those in IDPs and LEPs are the more active. Table 6 summarizes

Table 5. Value added at cost of factors: percentage shares by sector

		Industry			Services						
	Agriculture	Manufacturing	Construction	Total	Commerce	Transport and communication	Banking and insurance	Other commercial services	Total	Public and other non-profit services	Total
1951											
LEPs	8.7	46.1	4.7	50.8	9.8	7.2	3.4	13.0	33.4	7.0	100.0
Milan-Genoa-Turin	3.1	54.7	4.7	59.4	10.4	6.7	4.2	11.6	32.9	4.6	100.0
Others	15.4	35.9	4.8	40.6	9.1	7.8	2.5	14.7	34.0	9.9	100.0
OPs:											
Future LEPs	32.2	22.5	5.4	27.9	7.1	5.4	2.1	13.1	27.7	12.2	100.0
Future IDPs	21.2	32.7	4.9	37.7	9.1	5.0	2.3	15.1	31.4	9.7	100.0
Total Italy	20.0	32.1	4.9	37.1	8.7	6.6	3.0	14.4	32.7	10.3	100.0
1999											
LEPs	2.0	23.9	3.8	27.8	20.4	8.0	4.9	24.8	58.1	12.1	100.0
Milan-Genoa-Turin	0.6	25.7	3.4	29.1	20.4	7.5	5.9	27.6	61.4	8.9	100.0
Others	3.8	21.7	4.4	26.1	20.3	8.6	3.7	21.4	54.0	16.1	100.0
LILEPs	3.5	12.9	4.8	17.8	19.1	10.6	5.4	23.8	58.9	19.9	100.0
IDPs	2.9	31.9	5.9	37.8	18.6	5.4	4.1	21.3	49.3	10.0	100.0
Mixed provinces (LEP and IDP)	6.1	29.1	6.7	35.8	17.7	6.7	5.1	18.8	48.4	9.7	100.0
OPs	4.9	18.0	6.0	24.0	20.7	8.5	3.6	21.8	54.6	16.5	100.0
Total Italy	3.0	23.3	4.8	28.1	19.9	7.8	4.5	23.3	55.5	13.4	100.0

Source: Authors' own calculations based on Istituto Tagliacarne figures. IDPs and LILEPs have been omitted for 1951 because their value added was so minimal.

Table 6. Activity rates by province (as a percentage of resident population)

	Provinces by prevalent nature in year				Provinces by prevalent nature in 1991			
	1961	1971	1981	1991	1961	1971	1981	1991
Total population								
LEPs	48.4	47.4	49.9	49.2	47.9	47.5	50.0	49.2
LILEPs	57.2	48.4	46.7	48.5	46.7	47.1	48.4	48.5
IDPs	52.6	49.6	52.6	51.4	50.5	49.7	52.5	51.4
OPs	48.2	47.3	49.0	48.2	48.5	46.3	47.9	48.2
Total	48.6	47.7	49.7	49.3	48.6	47.7	49.7	49.3
Female population								
LEPs	12.4	12.8	17.0	18.1	11.7	12.7	17.0	18.1
LILEPs	12.0	14.3	14.6	17.3	11.8	12.7	16.1	17.3
IDPs	13.8	14.4	19.3	19.8	13.3	14.6	19.1	19.8
OPs	11.8	12.8	16.8	17.4	11.7	12.3	15.9	17.4
Total	12.1	13.1	17.1	18.2	12.1	13.1	17.1	18.2

Source: Authors' own calculations based on ISTAT population census figures. Weightings are based on resident population. Figures are based on resident population of more than 9 years in 1961 and of more than 13 years from 1971.

indicators for the 1961–1991 period. The change in the dates of censuses with comparable observations (1971–1991) shows that districts had the highest overall rates of activity. In 1991 this was some two percentage points above the national average, half of which was attributable to the higher number of women in the workforce by that stage. It should be noted that the activity rate in ID areas is above the national average in all census years.

Exports

Along with the other aspects we have already looked at, a glance at the figures for trade with other countries gives a clearer picture of the relative strength of the various productive structures of manufacturing areas. It is well known that the deficit generated by the import of agricultural and mineral products, especially oil, has to be balanced. Table 7 shows how historically it has been light industry that has ensured a net trade surplus. A breakdown of exports at the census date is available only for 1991, with data going as far back as 1985. Figures classified on the basis of our criteria are presented in Table 8, which shows how between 1991 and 1996 the share of exports generated by IDPs exceeded that achieved by LEPs. In 2001 they accounted for 44% of the total, outstripping LEPs by around two percentage points and showing a greater propensity to export (they are less important in terms of value added than LEPs, as is shown in Table 2). From this we can infer, however approximately, that IDs have the greater capacity for competing in markets where there is global competition.

This trend is consistent with the most recent research carried out on Italian international trade. An ISTAT survey for 1996 based on calculation of an indicator for Italian local production systems' propensity to export (the ratio between a local production system's exports per employee and the corresponding national average), shows that certain such systems in the centre-north are the most productive. These involve two of our LEPs and

Table 7. Italian manufacturing industry: balance of goods imported and exported between 1952 and 1991

	1952	1961	1971	1981	1991
Exports less imports (ITL billion)					
Food, drink and tobacco	−31	−57	−614	−2,351	−6,631
Personal/household goods	127	342	1,200	10,610	28,287
Heavy industry products	−28	30	881	450	−23,385
Automotive	*35*	*175*	*431*	*−514*	*−6,820*
Chemicals, rubber and plastics	*−13*	*81*	*363*	*916*	*−8,922*
Light mechanical engineering	−28	89	997	10,812	19,153
Total manufactured goods	40	404	2,464	19,521	17,424
Net imports of agricultural and mineral products	633	1,056	3,004	37,155	33,442
As a percentage of net imports of agricultural and mineral products					
Food, drink and tobacco	−4.9	−5.4	−20.4	−6.3	−19.8
Personal/household goods	20.1	32.4	39.9	28.6	84.6
Heavy industry products	−4.4	2.8	29.3	1.2	−69.9
Automotive	*5.5*	*16.6*	*14.3*	*− 1.4*	*− 20.4*
Chemicals, rubber and plastics	*− 2.1*	*7.7*	*12.1*	*2.5*	*− 26.7*
Light mechanical engineering	−4.4	8.4	33.2	29.1	57.3
Total manufactured goods	6.3	38.3	82.0	52.5	52.1

Source: Authors' own calculations based on ISTAT figures.

a good eight of our IDPs, as well as two OPs with a major medium-size enterprise component.[20] The hardcore of our exports is therefore provided by the exports of our IDs.[21]

Income and Prosperity

It is not easy to assess the degree of development or progress an area has achieved. First of all, there are reservations over how to calculate aggregate statistics at the local level, then also over the usefulness of the value of per capita income the higher this rises, or at least once it gets above certain levels. Moreover, a high level of income does not necessarily

Table 8. Summary of Italian provinces: percentage shares of exports

	1985	1991	1996	2001
LEPs	38.2	37.5	36.8	36.6
LILEPs	4.1	5.4	5.5	5.9
IDPs	42.2	41.0	44.7	44.0
Mixed	—	—	2.4	2.5
OPs	15.5	16.1	15.4	16.0
Total	100.0	100.0	100.0	100.0

Source: Authors' own calculations based on ISTAT figures. Percentages in 1985 have been computed using figures provided by the Italian Ministry of International Trade and based on the nature of provinces in 1991.

create a high level of prosperity.[22] And lastly, in our case the decision to replace local production systems with provinces gives rise to additional problems. With the appropriate degree of caution, then, we have attempted to compare the income and prosperity levels for the provinces we have identified.

First of all, we have calculated the value added by every manufacturing employee so as to compare per capita growth in the value of production. Trends in this ratio derive from interplay between two types of variation: changes to productivity and changes to the price of goods produced. Without information on these two items, we must limit ourselves to pointing out that within the industrialized provinces, the value of production per employee has grown much more quickly in the IDPs (Table 9). We cannot rule out the possibility that a good deal of this growth is due to prices of goods produced by light industry rising relative to those produced by heavy industry (compare niche products, whose rate of innovation in terms of materials and design presumably increases over the years, with mass production, whose relative technological poverty is well-known).

Meanwhile, the level of per capita output remained higher in the LE provinces, but the gap between these and the district provinces more than halved from approximately 38% in 1951 to 14% in 1996, and this trend is certainly indicative.

It should also be noted that high per capita production does not necessarily argue in favour of those who achieve it. In recent years at least, Italian industry has shown that the most capital-intensive productive structures have also been the least efficient. This is valid for the handful of large Italian groups generally, but it has also been demonstrated that for medium-size enterprise too total rates of return on capital invested tend to fall the larger the companies get.[23] With the appropriate pinch of salt, then, the lower per capita output does not mean in itself that small firms are generally inefficient. On the contrary, the performance of district-based firms gives ample room for positive interpretation, especially when the gap between them and LEP is relatively narrow.[24]

Another indicator we have looked at is per capita income. To this end, we divided the current Italian provinces into five categories, and as can be seen in Table 10, some 60–62% of total income generated by LEPs comes within the first two categories of per

Table 9. Per-capita value added (manufacturing industry, current prices)

	1951	1961	1971	1981	1991	1996
Index numbers (1951 = 100)						
LEPs	100.0	147.1	354.5	1,936.8	10,902.3	15,096.4
LILEPs	100.0	325.2	596.0	3,663.2	23,497.5	30,884.9
IDPs	100.0	212.2	477.6	2,926.3	14,779.1	20,796.3
OPs	100.0	198.2	411.4	2,365.0	13,395.0	22,090.5
IDPs per capita value added						
as percentage of LEPs per capita value added	62.4	90.0	84.0	94.2	84.5	85.9
as percentage of LILEPs per capita value added	117.8	76.8	94.4	94.1	74.1	79.3
as percentage of OPs per capita value added	84.7	90.7	98.4	104.9	93.5	79.8

Source: Authors' own calculations based on ISTAT and Istituto Tagliacarne figures.

Table 10. Ranking of provinces based on per capita income in 1996 (as percentage of total income)

Classes of per capita income (decreasing order)	LEPs	LILEPs	IDPs	Mixed provinces	OPs	Total
I	55.4	7.4	40.2	100.0	28.9	37.8
II	6.0	52.0	37.9	—	12.8	23.1
III	14.5	—	18.7	—	10.0	11.9
IV	10.4	5.6	3.3	—	17.4	9.4
V	13.8	35.0	—	—	30.9	17.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' own calculations based on ISTAT and Istituto Tagliacarne figures. Based on 2001 Italian provinces division.

capita income, whereas in IDs this rises to 78%, and in provinces which are neither, the figure is just 42%. Mixed provinces appear to be best placed, but it should be borne in mind that these account for just around 2% of total income and staff employed (see Table 2).

The evidence is strengthened if progress is measured in terms of prosperity rather than as pure per capita income. One tool for measuring this has recently been developed by IRPET, using six different groups of indicators or factors determining prosperity, and weighting them for the Tuscan situation based on results obtained from targeted interviews (Casini Benvenuti & Sciclone, 2003). For the purposes of this article we have used a simple average of the six groups, which involve lifestyle, soundness of economic growth, social and cultural infrastructure, life and work environment, social deprivation, and crime.

Based on the averages of these indicators (Table 11), almost two-thirds or 63.6% of the volume of income in the IDPs is generated by the two most prosperous categories, as against 48.3% in the LEPs and 59.4% in the LILEPs. The first category alone represents an average of over one-third in the IDPs, as against a mere 2.5% in the LEPs and 7.4% in the LILEPs.

These remarks are not merely intended to assess the relative quality of life in each different type of locality (LEP, LILEP, IDP or OP), because one of the principal contributions made by district-based analysis has been to suggest, or reiterate, that a worker's productivity can actually increase especially in types of manufacturing production

Table 11. Ranking of provinces based on prosperity (1996–2000) (as % of total income)

Classes of prosperity IRPET indicators (decreasing order)	LEPs	LILEPs	IDPs	Mixed provinces	OPs	Total
I	2.5	7.4	33.5	100.0	25.6	19.2
II	45.8	52.0	30.1	—	11.8	32.9
III	29.6	—	17.6	—	14.2	17.3
IV	8.3	5.3	18.7	—	18.8	13.2
V	13.8	35.3	—	—	29.6	17.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' own calculations based on IRPET, ISTAT and Istituto Tagliacarne figures. Based on 2001 Italian provinces division.

where his/her involvement or participation is required, not just for the usual company-specific reasons such as per capita capital, technological progress and better organization, but also as a result of the overall satisfaction he/she derives from his/her social relationships, working environment and generally the locality in which he/she lives.

Our View

The "Curve" of LE

The figures contained in Tables 2 and 3 describe the trend experienced by LE as a curve, an image which is confirmed by looking at events in company terms. We can distinguish three stages: the first is of robust growth until the mid-1960s (the years of the economic miracle), which for our purposes involves the 1951–1961 and 1961–1971 periods; the second sees the start of decline, and carries on until the 1980s (our 1971–1981); and the third is the phase of restructuring, globalization, and the emergence of large groups whose business is focused on less complex production.

The most significant progress was made, as we have seen, during the first stage. A sound industrial foundation was laid with IRI's integrated steel manufacturing process, which was built up after World War II under the Sinigaglia plan, and which involved the centres at Cornigliano, Naples and Piombino as well as the facility at Terni. Montecatini kick-started the petrochemical industry when the first European facility at Ferrara came onstream between 1949 and 1952.[25] At the same time, investment in the motorway and telephone networks, both owned by IRI, along with expansion in the electricity infrastructure, created demand for complex manufacturing such as electromechanical engineering, electronics, machinery and energy equipment. A new energy source was also developed in the shape of natural gas, which led to the setting up of ENI in 1953, and later to development of chemical operations via ANIC. Expansion of the large mechanical industries was also linked to the gradual, large-scale introduction of the Fordist production model, which Fiat was the first to adopt at its Turin-Mirafiori plant in 1955. This new system meant many markets could be penetrated on the strength of major productivity increases, for example Fiat's compact cars, Olivetti's calculators, and domestic electrical appliances. In this first period, growth was concentrated in Milan and Turin and their respective hinterlands, and brought about major migration flows from south to north.[26]

After 1963, large Italian companies had to face increasing difficulties which lasted till the end of the 1970s. Available company data reflects a major decline compared with the growth of the Italian economy as a whole. Until 1991, growth in their value added is 24 percentage points lower than the corresponding national figure and more than 30 points lower than gross domestic product (GDP) (see Table 12).

Many factors combined to cause this decline, some internal to the companies themselves and others external. They may be summarized as follows:

- Industrial policies pursued in the immediate aftermath of World War II, primarily nationalization of the electricity industry in 1963, which resulted in a new government entity with a fragile financial structure and imposed investment reconversions on former electricity companies, the results of which were largely negative; secondly, the policy for developing southern Italy, which was launched in 1950 and gathered momentum in the 1960s, provided major incentives, e.g. in the form of grants and subsidized loans in favour of capital-intensive industries, which ended up favouring those industries

Table 12. Growth of large Italian firms

	National indices		Indices of large firms value added			
	GDP	Value added (industry)	Total firms	State-owned firms	Private sector firms	Manufacturing firms
Index numbers 1974 = 100						
1974	100	100	100	100	100	100
1981	365	349	303	315	296	291
1991	1,116	861	753	892	669	648
1996	1,467	1,044	955	1,220	790	788
2001	1,824	1,183	1,129	1,328	961	896
Percentage differences to GDP index (industry value added for manufacturing firms)						
1981			−17.0	−13.7	−18.9	−16.6
1991			−32.5	−20.1	−40.1	−24.7
1996			−34.9	−16.8	−46.1	−24.5
2001			−38.1	−27.2	−47.3	−24.3

Source: Based on Mediobanca figures. It should be borne in mind that these indices overweight the growth of large firms because the Mediobanca database is made up of a number of firms which is "closed" between the first and the final years, excluding those which have gone into liquidation in the meantime.

devoted to mass production and exploiting foreign licences; little was done to help original technological content, which led to losing some not insignificant areas of leadership, e.g. calculators; the businesses that were thus favoured absorbed large amounts of capital, but did not bring about any competitive advantage on international markets, nor growth of a decent-sized local market, because they were not labour-intensive. As we have seen, there was some expansion of the LEPs but with low growth rates, and often followed by industrial regression (the example of Sardinia is sufficient in this regard).

- A crisis of entrepreneurialism in those companies which were most typical of LE, namely state holdings. These gradually lost operational autonomy due to the suffocating interference of what came to be known as the "hidden political shareholder", which translated on the one hand into sacrificing the strong driving role played during the years of the economic miracle, and on the other hand, to ongoing expansion of the public area by bailing out private-sector companies in difficulty (the most significant individual case was Lanerossi, followed by the several clothing companies acquired by Eni-Tescon, Motta Alemagna and Cirio, the food and aluminium units of Montedison, Sava (Alusuisse aluminium), the bankrupt Sir's and Liquichimica's "recoverable" facilities, Montedison's chemical division which was spun off to Enimont, and Fiat's steelworks.
- The failure of the principal source of capital funding for private-sector enterprise, namely the stock exchange (cf. the ratio between market capitalization and GDP,

which rose from just under 50% at the start of the 1960s to a low of 2.5% in 1977, and did not exceed 20% until the 1990s).

The year 1971 saw the end of the exchange rate system fixed with the Bretton Woods agreements, and the oil crisis hit shortly afterwards. Thereafter the lira began to lose value against the dollar, and above all against European currencies where the German mark was the strongest. These movements led to a potential advantage for all exporting industries, for large enterprises producing technologically complex goods (these had also generated most pressure for devaluation[27]), and for light industrial goods producers. The figures we present clearly show which of the two was more successful in taking advantage of these trends, in building a competitive edge and making it count.

The ID: Life and "Miracles"

The decline of LE[28] is therefore a both an indirect and direct result of industrial policy, but there is also at least one internal cause: the emphasis on mass production which was undifferentiated and low-innovation despite being capital intensive, in order to save on labour. The ongoing growth of IDs is based on exactly the opposite model: low capital and highly differentiated products undergoing continual innovation. It is impossible to understand the phenomenon of the IDs without reference to the fact that prolonged world-wide expansion in the immediate aftermath of World War II meant demand from intermediate social classes in industrialized countries outstripped the level strictly required for productive efficiency. This passage to differentiated, personalized demand caught large enterprise on the hoof, especially in Italy where the mass good production chains, e.g. for cars, domestic electric appliances, etc. involved products of average quality exposed to keen competition from industrialized countries and which, thanks to the progress of globalization, can be produced in lower-labour-cost countries as well. In other words, the origin of the epochal change from Fordism to post-Fordism was not, in Italy at least, technical (e.g. numerical control machines becoming more widespread) as many claim, especially flexible specialization theorists, but rather socio-cultural.

A second element to consider is the sedimentation of productive expertise, along with the increasingly refined demand for typical local products in certain parts of Italy which were less affected by the wave of mass industrialization. The permanence of small-sized specialist distribution units, such as the thousand small furniture shops, initially protected the growth of IDs and helped the flow back of critical observation from consumer to producer, as was not the case in the larger-scale distribution prevalent in other countries. This expertise and sophistication in the end-consumer, e.g. for food products, furniture, leatherwear, etc. is a useful source of information for the producer. In a structure such as the district, it extends to all stages of the manufacturing process and itself becomes a means of acquiring new technical knowledge. The most famous example of what we are talking about is the link between the textile and mechanical textile industries, in which weavers present in a district represent the "guinea pigs" for every mechanical innovation that is introduced. This is not just technical information that anyone can obtain or acquire, even some foreign sheikh, but a socio-cultural fact which embraces technical, ethical and aesthetical capabilities and is deeply-rooted in the history of individual locations.[29]

It should be made clear that districts do not just specialize in production of particular merchandise, but rather in meeting a cluster of needs (which to an economist may look like a commodity niche) that are first of all tested out for an extended period of time on location.

It is this two-sided nature of the district—linked to general cultural trends on the one hand and to a specific production and demand culture on the other hand—which makes it such a singular construction, so hard to fathom for the traditional economist who tends to see it as just a specialist localized cluster of enterprises.

In this technical and cultural *mélange* lies the ultimate source of the district's key competitive edge. This advantage is lost, we would suggest, if the district rashly abandons its cultural roots, or cannot manage to steer a course through the collection of infinite potential needs. Our research clearly shows how since the war districts have leveraged on both their key characteristics of continuity and cultural flexibility.

The history of IDs has yet to be written, but the outlines sketched so far show how their progression over the years since World War II has been driven by innovative processes of extended scope.

To give a brief and partial overview, we could cite: Prato, which has been radically transformed from the "city of rags" as it was known in the years immediately following World War II, to become a centre of the fashion industry capable of hundreds of sample collections several times a year, to the delight of stylists and manufacturers; the furniture districts, which have been transformed from artisan carpenters' shops into industrial furniture manufacturers which have revolutionalized production processes by introducing new materials such as plywood panels and chipboard, and new manufacturing techniques, e.g. spray varnish, thus pushing the design of their products to the level of world-beaters; shoe-manufacturing districts, which have also pioneered products using new materials (e.g. sportswear in the province of Treviso) alongside prestigious artisan techniques, and have seen the areas round Macerata and Ascoli, which in the years following World War II produced only slippers and very low-cost footwear, now become home to one of the world's leading luxury brand names in the shape of Tod's; ceramics, where the tile industry in particular has witnessed a series of inventions in terms of materials, machinery and distribution systems that have marked it out as a textbook example in some of the most accredited manuals of corporate strategy.[30] In all these cases, and in many more, which for reasons of space we cannot discuss here, the flow of production to the end market has led to developments in terms of design and the perfecting and invention of machinery, required by application of the new technologies. This has given rise to a synergic interaction between the demands of mechanization in the different "Made in Italy" segments and the vast, qualified mechanical culture of many areas in the country. It is from and in this mix of cultures that the "new" large Italian companies, such as Gucci, Benetton, Luxottica, Prada and Giorgio Armani, to mention just the most important, emerged.

The organic connection between the development of districts and the emergence of "Made in Italy" provides the main key to explaining Italy's continuing presence as one of the leading industrialized nations. As has been mentioned, it has been "Made in Italy" and light mechanical engineering that have found districts to be the most congenial home for their growth, which in turn has enabled the country to stabilize its balance of payments even in challenging times for international trade, when it was weighed down by massive mineral and food imports.[31]

Conclusions

As we said at the outset, with this article we are not intending to identify remote causes of the individual development of Italian industry, nor to put forward recipes for the present or the future. We merely set ourselves to illustrate in convincing, documented fashion what appears to have happened since the end of World War II, and put forward our own interpretation of these facts.

To summarize, we believe it is fair to conclude that:

(a) Over the long time-span since 1945, what has largely made our growth and elevated position in the international league tables possible has been, apart from, and more than, net inflows from tourism,[32] the constant and massive flow of exports of personal and household goods and light mechanically-engineered products.
(b) This sizeable flow of exports is largely attributable to growth in the industrial districts, which are the jewel in the crown of "Made in Italy".
(c) Although the income gap between the different parts of the country has not vanished, growth by the IDs and the policy of industrialization in southern Italy have together engineered a major territorial dispersion of both light and heavy industry, that is reflected in the fact that 33 of the 64 provinces have gone from being economically depressed to being industrially active (LEPs, LILEPs, or IDPs) which have to different degrees but usually valid links with the world market. Obviously this does not eliminate the problem of the difference in growth, but it does at least show that the seeds of its solution, in the shape of the desire and capability to overcome market risk and develop suitable local, state and community policies, are present and functioning in large parts of the country, including the south.
(d) Our survey also shows that it is possible to go beyond the metaphors of the third Italy or north-east-central Italy, however useful these may have been in their time, to overcome various interpretative rigidities and arrive at explanations which, like this, are founded on district-based analysis. The district form has overcome numerous tests and has proved itself to be particularly suitable for getting the most out of our historical heritage and ensuring growth is evenly distributed throughout the country.
(e) One particularly thorny issue involves the ability to generate technological advances that can be referred to their own areas. Leaving to one side fundamental research which, as such, calls national policy into question, in typical "Made in Italy" production the leadership acquired by top district-based firms suggests that these have remained at the forefront of their relative technologies, including design, whereas heavy industry and high-tech large Italian companies have found increasing difficulties and even lost many of the positions they once held, e.g. in calculators and motor vehicles.
(f) We are not yet in a position to say whether LE has interfered positively or negatively with the growth of IDs, or vice versa. A good deal of targeted empirical research and impartial reflection will be required before we can progress to a new modelling of the Italian economy to take account of its two motors, their synergies and antagonisms. Our economic policy is waiting for such a modelling of our "growth mechanism", as once we would have said, in order to anchor its measures to industrialization schemes that will enable us to evaluate its most probable economic, social and cultural effects. There is ample room here for theoretical and applied social research.

Table 13. Italian groups of companies and local production systems with more than 4000 employees and more than 800 million Euro turnover in 2001

Groups of companies and local production systems	Main business	Turnover: In million of Euros	Turnover: Percentage non-domestic	Employees Number at year end	Controlling shareholder (percentage of share capital in 2003)
Main groups of companies controlled by Italian interests					
IFI/Fiat[a]	Conglomerate	70,334	66[b]	274,792	Agnelli family (50%)
Pirelli[a]	Conglomerate	39,130	34[b]	155,791	Tronchetti Provera family (37% ord.)
ENEL[a]	Energy	28,240	2[b]	72,661	Italian Treasury (68%)
ENI[a]	Energy	48,925	44[b]	70,948	Italian Treasury (30%)
Finmeccanica/STMicroelectronics[a]	Electronics	10,329	—	61,238	Italian Treasury (34%)
Edizione Holding/Benetton[a]	Conglomerate	7,628	44[b]	58,314	Benetton family (100%)
Parmalat Finanziaria[a,c]	Food	6,000	70	36,209	Tanzi family (50%)
Luxottica[a]	Eyewear	3,065	95	35,450	Del Vecchio family (69%)
Riva Acciaio	Steel	4,747	32	25,059	Riva family
Gemina[a]	Construction and airport services	2,417	28[b]	21,282	Private syndicate (43% ord.)
Italmobiliare[a]	Building materials	4,207	68	19,137	Pesenti family (46% ord.)
Cirio[a,c]	Food	1,189	58	17,574	Cragnotti family (63%)
Ferrero	Food	4,356	75	15,982	Ferrero family (100%)
Fineldo/Merloni Elettrod.[a]	Domestic appliances	2,060	79	13,641	Merloni family (100%)
Fininvest[a]	Media and advertising	4,228	—[b]	11,520	Berlusconi family (100%)
Cofide[a]	Conglomerate	2,079	33	11,472	De Benedetti family (35%)
Marzotto[a]	Textiles and clothing	1,772	82	11,373	Marzotto family (52% ord.)
HdP[a]	Conglomerate	3,303	51	10,849	Private syndicate (45% ord.)
Fincantieri	Shipbuilding	1,821	68	9,588	Fintecna/Italian Treasury (83%)
Perfetti Van Melle	Food	1,305	62	9,147	Perfetti family
Lucchini	Steel	1,943	49	9,117	Lucchini family (65%)
Radicifin	Textiles and chemical fibres	1,423	64	8,604	Radici family (100%)
A. Menarini	Pharmaceuticals	1,544	45	8,373	Aleotti family
GIM[a]	Metals	2,414	80	7,908	Private syndicate (48% ord.)

Prada	Leather goods and clothing	1,729	74	7,521	Bertelli and Prada families (100%)
Barilla	Foods	2,202	32	7,323	Barilla family (99%)
Miroglio	Textiles and clothing	842	52	7,309	Miroglio family (100%)
Artsana	Parapharmaceutical	1,311	42	6,576	Catelli family
Merloni Termosanitari	Domestic appliances	972	85	6,267	Merloni family (73%)
Antonio Merloni	Domestic appliances	973	86	6,217	Merloni family (100%)
Veronesi	Foods	1,544	11	6,190	Veronesi family
Safilo	Eyewear	847	81	5,755	Tabacchi family (100%)
Candy	Domestic appliances	904	77	5,618	Fumagalli family (100%)
Snia[a]	Chemical fibres	957	64	5,549	Bios (59%)
Cartiere Burgo[a]	Paper	1,707	50	5,454	Marchi family, Mediobanca and others
De' Longhi[a]	Domestic appliances	1,178	74	5,195	De' Longhi family (75%)
Marcegaglia	Steel	1,624	40	4,432	Marcegaglia family (100%)
Cremonini[a]	Foods	1,341	18	4,385	Cremonini family (57%)
Giorgio Armani	Clothing	1,272	76	4,210	Armani family (100%)
Main groups of companies controlled by non-Italian interests					
IBM Italia	Electronics	4,455	34	17,481	IBM Corp. (USA)
Electrolux Zanussi	Domestic appliances	1,916	92	10,163	Electrolux (SE)
Gucci	Leather goods and clothing	2,565	87	9,889	PPR (FR)
ABB	Mechanical engineering	1,659	39	8,320	ABB (SE - CH)
Michelin Italiana	Rubber and cables	1,491	52	7,202	Etablissements Michelin (FR)
American Standard Italia	Household goods	955	—	7,000	American Standard Corp. (USA)
Siemens Information and Comm.	Electronics	974	—	6,112	Siemens (DE)
Whirlpool Europe	Domestic appliances	1,192	75	5,588	Whirlpool Corp. (USA)
Unilever Italia	Food and cleaning products	2,480	21	6,001	Unilever (NL)
RIV-SKF	Mechanical engineering	1,000	62	5,978	SKF (SE)
Piaggio Holding	Automotive	996	56	5,513	Private equity fund (DE)
Nestlé Italiana	Food	1,676	11	5,281	Nestlé (CH)
Alcatel Italia	Electronics and telecommunications	2,282	72	5,025	Alcatel (FR)

(*Table continued*)

Table 13 *Continued*

Groups of companies and local production systems	Main business	Turnover		Employees Number at year end	Controlling shareholder (percentage of share capital in 2003)
		In million of Euros	Percentage non-domestic		
Nuovo Pignone	Mechanical engineering	2,030	84	4,652	General Electric (USA) (95%)
AST	Steel	1,600	45	4,500	Thyssen-Krupp (DE)
Egidio Galbani	Food	1,107	18	4,214	BC Partners
Italtel Holding	Electronics and telecommunications	934	13	4,036	Private equity funds
Saint Gobain (Italia)	Glass	1,155	24	4,001	Saint Gobain (FR)
Principal industrial districts (ID) and medium sized firms local production systems (LPS) (2000 figures) [f]					
Prato (ID)	Textiles	4,200	63	43,000[d]	8,500
Asse del Sempione (ID) (Varese)	Textiles and clothing	2,700	40	36,400[d]	3,900
Fermano Maceratese (ID) (Macerata and Ascoli Piceno)	Footwear	1,000	50	30,000[d]	2,900
Biella (ID)	Textiles	4,000	35	25,000[d]	1,100
Schio-Thiene (ID) (Vicenza)	Mechanical engineering	2,900	50	23,600[d]	759
Lecco (ID)	Metals	2,000	30	21,300[d]	1,600
Sassuolo (ID) (Modena)	Ceramic tiles	4,200	70	21,200[d]	144
Lumezzane (ID) (Brescia)	Mechanical engineering	2,000	60	20,000[d]	2,000
Rovereto-Storo (LPS) (Brescia, Trento, Verona)	Mechanical engineering	3,515	48	16,956[e]	
Santa Croce (ID) (Pisa)	Hide tanning and dyeing and footwear	3,000	52	15,700[d]	1,749
Riviera del Brenta (ID) (Verona and Padua)	Footwear	1,700	89	14,200[d]	965
Pesaro (ID)	Furniture	1,300	32	13,000[d]	1,200
Vicenza (ID)	Jewellery	3,600	90	12,000[d]	1,150
Capannori (ID) (Lucca)	Paper	2,300	—	11,300[d]	140
Belluno (ID)	Eyewear	1,400	75	11,200[d]	930
Matera (ID)	Sofas and divans	1,450	—	11,000[d]	350

Carpi (ID) (Modena)	Knitwear	1,100	36	11,000[d]	2,000
Parma (ID)	Food and agriculture	8,300	—	10,500[d]	2,070
Arezzo (ID)	Jewellery	6,000	70	10,000[d]	1,100
Alto Livenza (ID) (Belluno, Pordenone, Treviso, Venice)	Wood and furniture	1,973	36	9,825[e]	
Veneto: Pedemontana and Meridionale (LPS) (various)	Textiles and clothing	2,161	36	9,645[e]	
Arzignano (ID) (Vicenza)	Hide tanning and dyeing	3,000	60	9,000[d]	800
Cusio Valsesia (ID) (Novara and Vercelli)	Taps and fittings	1,200	70	9,000[d]	430
Argenta-Cento (LPS) (Bologna and Ferrara)	Mechanical engineering	1,707	54	8,807[e]	
Massa Carrara (ID)	Marble	1,250	—	8,800[d]	1,160
Montebelluna (ID) (Treviso)	Boots	1,500	70	8,600[d]	428
Castellarano-Vignola (LPS) (Bologna, Modena, Reggio Emilia)	Furnishing and ceramics	1,581	54	8,567[e]	
Camuno Sebino (ID) (Brescia)	Metalworking	2,675	28	7,993[e]	
Carmagnola (LPS) (Turin)	Mechanical engineering	1,373	34	7,277[e]	
Valenza Po (ID) (Alessandria)	Jewellery	1,550	50	7,000[d]	1,300
Verona (ID)	Footwear	1,250	48	7,000[d]	670
Castelgoffredo (ID) (Mantua)	Stockings	1,150	50	6,600[d]	280
Cantù Brianza (ID) (Como, Milan)	Wood and furniture	1,121	43	4,982[e]	
Valpolicella (ID) (Verona)	Marble	2,000	18	4,800[d]	527
Lecchese tessile (LPS) (Como, Lecco)	Textiles and clothing	877	52	4,541[e]	
Solofra (ID) (Avellino)	Hide tanning and dyeing	1,500	—	4,500[d]	400

[a]Group includes companies listed on stock exchange.

[b]Tertiary accounts for a major share of the business.

[c]Parmalat and Cirio were placed under extraordinary administration in 2003.

[d]Club dei Distretti estimates.

[e]*Source*: Mediobanca-Unioncamere (2003). Figures include only medium-sized firms which are part of the local production system.

[f]Fourth column, percentage export; last column, number of firms.

Sources: Ricerche e Studi (various years), Mediobanca (various years), Mediobanca-Unioncamere (2003) and Club dei Distretti-Unioncamere (*Guida ai distretti industriali*, 2004). Turnover for groups of companies is taken from consolidated or aggregated figures; the controlling shareholder and its interest as stated refers to the parent company.

(g) A first period of relative success by our large-scale enterprise, both public and private, which was marked by the concentration of growth in certain areas of northern Italy, notably Milan and Turin, was followed by a stage of gradual decline, despite some distribution of that growth to other areas of the country. It is difficult to say what part in that decline is attributable to the effects of policies adopted and how much to the absence in Italy of a managerial class that was able to deal with such problems. The fact remains, and a worrying one at that, that: (i) large high-tech companies have either disappeared totally or ended up in non-Italian hands; (ii) new large companies have arisen selling virtually the same goods as the industrial districts (the key players are listed in Table 13). This does not of course mean that positive results cannot be achieved in certain sub-sectors of heavy and high-tech industry, as success stories such as Alenia, ST Microelectronics and Ferrari clearly show.

These, then, are the facts which, until proved otherwise, must be taken into account in order to draw up policy for industrial development in Italy. And if Pinocchio, i.e. the average ill-advised politician, does not want to take his medicine in the shape of a policy which provides for the features and requirements of IDs, so much the worse for Italy. All we have done is attempt to sweeten the pill.

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Notes

1. An exception has been made for the province of Pordenone, which was established in 1968, and which was primarily LE in nature as from the time when it was separated out from Udine.
2. A similar procedure was used in Becattini and Menghinello (1998).
3. Five hundred and one employees in 1951–1961. It would be possible to spend a long time debating the precise dimensions of what actually constitutes "large-scale" enterprise. The setting of thresholds is always arbitrary, and depends largely on the aspects one wishes to emphasize. The figure of 500 staff in many ways represents the classical definition, and one which we believe is much more appropriate for our purposes than the 250 suggested by the European Union (EU), since our aim is to identify technologically complex firms whose production tends to impact on the markets in which they operate. These accordingly derive from facilities of substantial size, such as steelworks, rolling-mills, petrochemical plants, mechanical facilities for mass production, etc. Using the 250-staff threshold would have led to marginal differences in the results, with around 1% more staff employed in the LEs and some five of the 93

Italian provinces changing category (three new LEPs and two LEPs becoming OPs). It is also worth pointing out that in 1996 the leading Italian manufacturing groups accounted for 80% of employees in facilities with over 500 staff [figures compiled by Ricerche e Studi (various years) from the 117 groups covered in the R&S Annual Directory]. With regard to staff employed in IDs, we have used the figures compiled by ISTAT on the basis of an algorithm which treats as IDs those local working systems in which certain conditions are met simultaneously, e.g. percentage of workers employed in manufacturing, density of manufacturing enterprise, proportion of staff working in sector of specialization, percentage of sector of specialization and percentage of staff employed at small and medium-size enterprises.

4. The thresholds for qualification as IDs proved to be slightly below half the number employed in manufacturing in the province in question as at the date of the various censuses. The thresholds for qualification as an LE area went from 22–25% in the 1951–1971 period to 12–13% in 1991–1996, a change at least in part brought about by a higher degree of outsourcing.
5. For districts prior to 1991 we have used Brusco and Paba (1997), apropos which we would refer to the note of caution sounded by the authors therein. As we state earlier, our assumptions may be open to question, but we believe misgivings over the data should not significantly alter the statistical framework we have constructed.
6. For ease of comparison in terms of analysis of temporal data, low industrialization has been defined in such a way as to ensure that the phenomenon occurs in every year covered by the censuses, assuming the nature of the province with reference to the most recent year (1991 or 1996). The provinces which fall into this category are: Bolzano, Brindisi, Campobasso, Caserta, Foggia, Lecce, Palermo, Potenza, Rome, Syracuse, and until 1991 Cagliari and Nuoro.
7. Construction of the steelworks at Taranto was approved in 1959. In 1961 it employed just under 500 staff, and came fully onstream during the 1960s. In 1971 its headcount totalled 13,000 staff, which reached a high of over 20,000 in 1980–1982, making it the largest industrial centre in southern Italy, followed by the Alfa Romeo works in Naples with approximately 18,000 staff.
8. As this province only came into existence in 1968, the 1971 census is the first in which it is included. However, Pordenone's emergence as having the characteristics of an LEP can be dated to the 1960s, when its leading company Zanussi (a domestic electric appliances manufacturer) began to expand its local factories, employing more than 10,000 staff. If considered together with Pordenone, the province of Udine would not have changed category until 1961 ("OP"), but would have become an LEP as from 1971 due to Pordenone. Based on our handling of the data, Udine remained among the "others" until 1981 and became an IDP in 1991.
9. In fact, the proportion of staff employed in LEP in the province of Rome remained at around 19% from 1971, but in that year the threshold for qualification as an LEP was 24%, and only dropped below this level after 1981.
10. The same is true for Alessandria and Ferrara as for Rome (see previous note): these became LEPs because the number of staff employed in their respective local industries (rubber and cables, chemicals and steel) remained relatively constant as a percentage of the province total, compared with a general reduction at the national level. In both provinces there is what we might call a "district" component, which is not however sufficient to exceed the threshold we have adopted.
11. Sassari is a notable absentee from the ranks of LEPs in Sardinia. This is because the petrochemical plant built by the cluster companies set up by Società Italiana Resine with the help of sizeable government incentives never managed to make an impression on even the slender manufacturing employment of the province as a whole. Similar considerations apply to Liquigas-Liquichimica, whose ventures were smaller in scale and in any case shared with several areas of mainland Italy, and to the electronics pole of Catania, at least until 1996, where the ST factory has grown significantly but mostly since the mid-1990s. Conversely, the presence of large fashion houses in Tuscany such as Gucci, Prada, Ferragamo, etc. does not emerge clearly, as these base a good proportion of their manufacturing component on subcontracting to companies in industrial districts.
12. In their work on districts, Sebastiano Brusco and Sergio Paba (1997) have identified a high number of IDs for the year 1951 (as many as 37). Our selection is different, in that it is based on the proportion of staff employed in the district segment of a province. Our four IDPs in 1951 comprise 16 local production systems.
13. Readers may wonder why other IDPs in southern Italy do not figure in our study. The reason is quite simply consistency of classification. Having decided to follow national averages rather than work on *ad hoc* thresholds, the proto-districts in southern Italy illustrated by, for example, Viesti

(2000) do not emerge as such. It goes without saying that in terms of public intervention such districts are no less important than those located in central and/or north-east Italy (Becattini & Sforzi, 1992).

14. Given the marginal importance of the province of Viterbo within the ID areas (just 0.5% of total staff), we did not consider it appropriate to illustrate it separately.
15. These are like-for-like variations calculated using "closed" groupings of provinces. They presumably tend to disadvantage the IDPs (which have recorded continuous growth) *vis-à-vis* the LEPs, the total for which includes those provinces—19 in total—which have become OPs or IDPs following a decline in the LE component.
16. The map of medium-size enterprises recently traced for the 1998–2000 period by Mediobanca-Unioncamere (2003) seems to provide some confirmation and add some detail. If we assess the contribution of medium-size enterprise according to criteria consistent with the assumptions of this study, i.e. the percentage of provincial value added which it contributes over and above the national average, some 33 provinces would qualify as being characterized by medium-size enterprise. These could be divided into three groups: the largest, with 19 provinces plus the two mixed provinces of Mantua and Parma, involve IDPs; then there are six LEP-type provinces—as well as the two mixed—in which the medium-sized firms primarily originate from LEP; and finally, there are six medium-sized provinces which would include the high-industrialization OPs referred to earlier apart from Trento but including Pavia, which has always been "other" except for in 1951. Partial confirmation of this reading is found in Giovanni Solinas's work on local systems of medium-size enterprise (Solinas & Baroni, 2001), where the provinces of Bologna, Verona and Forlì are identified as such. In any case medium-size firms are more present in the major IDPs (with the exception of Florence), and this accordingly qualifies them as major constituents of the economy of district systems in general.
17. We have adopted the classification used by Bellandi (1999).
18. It should be borne in mind that the method we have used of focusing on provinces, when coupled with Brusco and Paba's (1997) use of local production systems identified in 1981, probably leads to the presence of IDs being underestimated prior to 1991. As the two authors show, there was a high "mortality" rate between the 1950s and the 1970s, which is probably explained by the fact that many pre-districts were just agglomerations of small inefficient firms.
19. This is due to the low level of employment at traditional large enterprise in the high-tech segment, and also the fact that the large firms to have emerged in recent years such as Benetton and Luxottica tend to operate in the areas of personal and household goods.
20. ISTAT (2002, p. 51). The provinces with the most competitive systems are: LEPs: Pordenone and Alba (Cuneo); IDs: Vercelli and Borgomanero (Novara), Treviglio (Bergamo), Castel Goffredo (Mantua, Brescia, Cremona), Arzignano (Vicenza), Vicenza, Montebelluna (Treviso), Modena, Sassuolo (Modena), Reggio Emilia, Pietrasanta (Lucca), Prato, Arezzo; OPs: San Bonifacio (Verona), Sant'Ambrogio di Valpolicella (Verona) and Gualdo Tadino (Perugia).
21. This conclusion concurs with that reached in 1998 by Becattini and Menghinello.
22. Giorgio Fuà emphasizes these ideas particularly in his book *Crescita Economica* (*Economic Growth*), whose subtitle "Le insidie delle cifre" ("the snares of statistics") puts readers on their guard against a two-fold danger, "because not only with an uncritical use of statistics does one acquire a huge number of facts, all of which are false, one also loses sight of those limited, but useful nonetheless, indications which could have been derived by employing the same statistics judiciously" (p. 7).
23. These results, which derive from analysis of Mediobanca's data on large and medium-size enterprises, depend on the fact that a higher product per employee requires a higher level of technical fixed assets and therefore also of capital invested. The higher production achieved in this way is to be viewed as economically efficient only if the overall returns on all capital employed do not decrease (Mediobanca, various years).
24. See also Becattini and Bellandi (2002). It should also be pointed out that there are different effects on the local distribution of value added. In high capital-intensive LE, a major share has to be earmarked for rewarding funds provided by financiers and shareholders who have interests outside the place where the income is generated and which is not necessarily where the funds are re-employed.
25. Montecatini was destined to produce the only Nobel prize to be conferred on an Italian scientist in recognition of research funded by an industrial company. Giulio Natta, who received the award in 1963, began his research in 1953, discovering a new class of polymer which was developed during large-scale industrial production of thermoplastic material at the Ferrara facility after 1957.

26. See Coltorti (2002). Growth in the LE areas does not appear to have interfered with that of the IDs. However, the economic miracle led to many "traditional" artisans from southern Italy migrating to the north, attracted by better-paid, or more secure, work in the factories, which meant that the traditional expertise which led to the transformation of areas in central and north-eastern Italy into IDs were lost in the south.
27. Thus, for example, at the beginning of the 1990s, in the process that led to Italy's involvement in European monetary union, we find significant remarks in the annual reports of some of Italy's leading industrial companies: "devaluation of the lira and agreement over the cost of labour represent major opportunities which must be taken" (Fiat); "exchange rates being more or less set at one with inflation from costs have depressed the profits of those companies which are most exposed to international competition" (Snia Bpd); "maintaining parity for the exchange rate of our currency ... clearly seems to have been a weak point" (Zanussi). Not to mention the historic interview granted by Umberto Agnelli to Giuseppe Turani, which was published in *La Repubblica* on 21 June 1980 and in which the head of the leading Italian industrial group publicly asked for the lira to be devalued and the right to lay off staff.
28. The loss of staff and value added following the 1980s is in part due to service activities such as transportation and maintenance being outsourced. At the same time, one should not forget that in other large industrialized countries globalization has led to an increase in size by LE. The different production model offered by IDs, where tertiary activities are always carried out separately from manufacturing, does not in our view invalidate comparison with LE areas, because IDPs grew in size precisely when LE was outsourcing services.
29. See Becattini and Dei Ottati (2004).
30. On these themes see: Becattini (2000), Corò and Rullani (1998), Porter (1998), Sabbatucci Severini (2001).
31. For analysis of Italy's competitive position in the traditional "Made in Italy" segments and light mechanical engineering during the 1980s and 1990s see Fortis (1996).
32. Which incidentally are not unconnected to the developments in manufacturing illustrated here.

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Appendix

Table A1. List of provinces in 1996

Mixed LEP/IDP	Mantua (OP in 1951–1961; IDP in 1971–1991); Parma (OP in 1951–1981; IDP in 1991)
LEP	Alessandria (OP in 1951–1991); Aosta; Belluno (OP in 1951–1971); Caltanissetta (OP in 1951–1961); Chieti (OP in 1951–1961); Cuneo (OP in 1951–1971); Ferrara (OP in 1951–1991); Frosinone (OP in 1951–1961); Genoa; Gorizia; La Spezia; L'Aquila (OP in 1951–1961); Latina (OP in 1951–1961); Livorno; Milan; Naples; Pordenone; Rieti (OP in 1961–1971); Savona; Taranto (OP in 1951–1961); Terni; Turin; Trieste
LILEP	Avellino (OP in 1951–1991); Bolzano (OP in 1971–1991); Brindisi (OP in 1951–1961); Campobasso (OP in 1951–1971); Caserta (OP in 1951–1961); Lecce (OP in 1951–1981); Foggia (OP in 1951–1971); Palermo (OP in 1951–1971); Potenza (OP in 1951–1991); Rome (OP in 1951–1981); Syracuse (OP in 1951)
IDP	Ancona (OP in 1951–1971); Arezzo (OP in 1951–1971); Ascoli Piceno; Bergamo (LEP in 1951–1961; OP in 1971–1981); Brescia (LEP in 1951–1961); Como (OP in 1951–1961); Cremona (OP in 1951–1981); Florence (OP in 1951); Lucca (OP in 1951, mixed in 1961); Macerata; Modena; Novara (LEP in 1951–1971; OP in 1981); Padua (OP in 1951–1981); Pesaro-Urbino (OP in 1951–1961); Pistoia (OP in 1951); Ravenna (OP in 1951; LEP in 1961; OP in 1971); Reggio Emilia (OP in 1951); Rovigo (OP in 1951–1971); Siena; Teramo (OP in 1951–1981); Treviso (OP in 1951–1961); Udine (OP in 1951–1981); Varese (OP in 1951–1981); Vercelli (LEP in 1951–1961; OP in 1971–1981); Vicenza (LEP in 1951–1961)
LIIDP	Viterbo (OP in 1951–1991)
OP	
HIOP	Asti (LEP in 1971); Bologna; Forlì; Massa Carrara (LEP in 1951–1981); Pavia (LEP in 1951); Perugia; Piacenza; Pisa (LEP in 1951–1961 and 1981); Sondrio (LEP in 1951–1961); Trento; Venezia (LEP in 1951–1991); Verona
OPother	Agrigento; Bari; Benevento; Cagliari (LILEP in 1981–1991); Catania; Catanzaro; Cosenza; Enna; Grosseto; Imperia; Matera (LILEP in 1971–1991); Messina; Nuoro (LEP in 1981–1991); Pescara; Ragusa; Reggio Calabria; Salerno; Sassari; Trapani

LEP = Large enterprise province; LILEP = Low industrialization large enterprise province; IDP = industrial district province; OP = other province; HIOP = high industrialization (and per-capita income) other province. The following are included in the original list of provinces as at 1951: Isernia (separated from Campobasso in 1970), Oristano (separated from Cagliari in 1974) and the following provinces established in 1992: Biella (separated from Vercelli), Crotone and Vibo Valentia (separated from Catanzaro), Lecco (separated from Bergamo), Lodi (separated from Milan), Prato (separated from Florence), Rimini (separated from Forlì) and Verbano-Cusio-Ossola (separated from Novara). Pordenone was separated from Udine in 1968 but has been considered individually.