

Forms of Industrial Development in Chinese Specialized Towns: An Italian Perspective

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ABSTRACT. The fast rise of made in China in international markets has raised concern, among others, in the SME clusters of Italian industrial districts. The several cases of specialized towns (i.e. localities characterized by the presence of a specific cluster) in the China more dynamic regions exemplify a rich variety of factors supporting industrial growth, some of them based in cluster and local relations, other ones in international business strategies. This article presents two specific contributions. Firstly, it is proposed an advancement in the understanding of cluster forms of industrial development in China new industries, through a statistical analysis on a set of specialized towns of the Guangdong Province. The analysis is led by hypotheses generated and discussed on the basis of models of local and cluster development incorporating the experience of Italian industrial districts. Secondly, it is suggested the application of the empirical results to the reflection on business and policy reactions in Italian industrial districts to the international competitive challenge.

Key words: New industries, specialized towns and clusters in China; Competitive challenge to Italian industrial districts; International business; Regional and local development policies.

JEL Classification: F12, F23, R58

1. Introduction

The rise of made in China has been favored by international traders and multinational firms around the world, but has prompted the concern of many SME (small-to-medium sized enterprises) manufacturing clusters in developed countries, for example in Italian industrial districts, and in less developed countries as well. The Chinese competitive challenge comes from a rich variety of factors. They include of course cheap labor and land; large internal market; state and local policies opening to foreign direct investments by multinational firms with increasing capacities in the management of international production systems (Gereffi and Korzeniewicz, 1994; Arndt and Kierkoski 2001). But recent investigations have pointed out also to the role of local reserves of entrepreneurship and competence; regional policies supporting the development of industrial clusters and the constitution of large infrastructures of education, research and communication; and the

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influence of networks of overseas Chinese entrepreneurs and Asian international value chains (Enright *at. al* 2005).

A laboratory for understanding this variety is given by the several cases of specialized towns which have been developing in the hotbeds of Chinese new industrialization, like in the southern province of Guangdong. Section 2 opens up with a summary of previous researches on this topic, and relates them to studies and models of local development built around the experience of Italian industrial districts. This relation deserves attention for at least three reasons.

First, the reference to models of local development helps in generating hypotheses on variables which may be relevant for assessing nature and variety of forms of industrial development in the Chinese specialized towns. Second, the application to the peculiar experiences of Chinese new industries, even when possible, points to variations on those models - the variations easily concerning both the strong presence of international business, and the heavy role of public governance on local industrial development in China. Third, the extension and fragmentation of production systems and value chains managed by multinational firms is a general tendency which is hitting the local production systems of many countries (Humphrey and Schmitz, 2002) and of Italian industrial districts too. Their SMEs and related collective/public - local/regional agencies are learning how to react progressively to this challenge, which the growth of Chinese new industries is part of. And the reference to Chinese experiences of industrial development within specialized towns may help to understand better both the nature of the challenge and the strategies of competitive and collaborative reaction.

Building on those premises and on apposite fieldwork, collection of official statistical data, and scanning of various sources of complementary information, a “cluster analysis” has been carried on. The data refer to a set of 66 specialized towns in the Guangdong province, in the period 2003-2005. The hypotheses, the definition of operational variables, the resulting typology, and some comments on the identified types are illustrated in sections 3 and 4. Section 5 reports details on some types, referring to case studies of specialized towns included in the data set, and focusing to the competitive side.

Sections 6 and 7 come back to the relation between specialized towns and models of local development. It is tried here to extract, from the cluster analysis’ results, some

suggestions precisely on the strategies of competitive and collaborative reaction, in face of international competitive challenges, that may be enacted in industrial clusters characterized by specialized SMEs and stable ties with local social networks, like in Italian industrial districts. Though a deeper elaboration on such suggestions is deferred to other articles.

2. Chinese specialized towns and local development

If we see the Chinese challenge just as coming from a myriad of local and international firms mass manufacturing standard products in China and exploiting there a large supply of cheap labor and land, then the reaction to the Chinese challenge tends to be played at the level of the strategies of de-localization of single firms and at the level of national government (and EU) negotiating the protection against the worst forms of price competition and imitation².

The approach and the design of strategies of reaction change when it is understood that: a) the more solid Chinese challenge to SME clusters, like those in Italian industrial districts, comes from “new industries”; b) those new industries are characterized by capacities of local entrepreneurship, wide strategies by international business, and diffused public support combining at various levels; and c) these combinations operates diffusely at the level of several clusters of firms, like in the so-called “specialized towns”³.

According to Bellandi and Di Tommaso (2005, p. 708), specialized towns in Chinese industrial regions appear to be as “localities characterized by a significant agglomeration of industrial activities and by a high share of them concentrated within localized industry”.

A definition of “specialized town” with such characters is explicitly assumed, for example, by the provincial government of Guangdong⁴. The province core is the Pearl

² The international negotiation of trans-national or global rules of interaction is of course an important key.

³ The three points represent also the main interpretative results elaborated within the “China and Italy research and leaning project” referred to in the acknowledgment section.

⁴ As stated by the Provincial government, in order to receive the official designation, the specialized town has to satisfy the following requirements: i) from an administrative point of view it has to be a town, a county or an urban district; ii) in term of sectoral specialization, at least 30% of the manufacturing output (and/or employment) has to be produced by the specialized industry; iii) the annual industrial output value of the specialized industry has to be more than 2 billion Yuan. For more information on aggregate measures concerning a core sample of STs, see Di Tommaso and Bellandi (2006).

River Delta (between Canton, Hong Kong and Macao), that is one of the most industrialized areas of China (Cheng 1998; Enright *et al.* 2005). The definition is applied within provincial policies aimed at supporting innovation and quality improvement in manufacturing SMEs. Similar phenomena and definition are found elsewhere in China, in particular in the other great industrial engine, that is the area of the Yangtze Delta, around Shanghai⁵.

Specialized towns have different industrial and territorial characters. Their clusters of firms may be centered on the organization of a big firm, or on a set of big firms, or on a numerous set of SMEs. Larger firms are sometimes Chinese state owned, or owned by the local collectivity; often they are joint ventures between privatized Chinese firms and international firms; more recently, with laws removing institutional barriers, the number of directly foreign owned companies is also increasing quickly (Iacobucci 2006). Several cases show a dominant presence of overseas Chinese entrepreneurs. Sectoral specializations span many different sectors, activities, and products.

Do the observed clusters correspond to something more than random and temporary agglomerations of enterprises? May we find endogenous characters, related to social, industrial and public support? Such questions are generated by the reference to models of local development, like those exemplified by many industrial districts in contemporary Italy (Becattini 2004). In quite synthetic terms, it could be said that local development is characterized by an evolving coupling between a “local production system” and a “locality of industry” (Bellandi and Di Tommaso 2006). The first is intended as a cluster with systemic characters, where sets of specialized firms run complementary activities, possibly extending to various manufacturing and service sectors related to the core business field; the producers are locally organized by way of both market mechanisms and non market mechanisms; the organization and development of the cluster is supported by the fabric of social and civic life of a locality of industry. This is a locality with a socio-economic identity (and corresponding to a set of contiguous towns, villages, rural areas, with a

⁵ The economy of the two Deltas is characterized by a variety of big cities playing as gateways for national and international trade and investments, a rich set of localities where various types of productive activities are clustered, strong regional infrastructure including transport, communication, universities, and science and technology parks (Enright, Scott and Chang, 2005).

principal town or city) characterized by the presence of one or a few local production systems.

The so-called Marshallian industrial district (Becattini 1990) is an ideal-typical model of a locality of industry showing a steady path of development. This model is characterized by the local dominance of a single production system (local specialization), by the decisive role of local centers of strategy and decision-making in the definition of local private and public investments (endogeneity), by the plurality of autonomous centers of business decision-making (de-centralization). Here local development produces (and is propelled) by the realization of local external economies. They are returns for local business and resources based on the belonging to a well organized system of evolving division of labor. The organization of this division of labor depends on the constitution and provision of an appropriate architecture of specific public goods.

Outside ideal-typical conditions, local development is more generic, less endogenous, more centralized. Variety may be useful and even necessary in face of various types of external conditions of market, technology, institutional infrastructure, cultural tradition, and against possible discontinuities in local and external conditions. However, beyond certain thresholds of sectoral dispersion among the agglomerated activities, dependency from external strategic control, and business centralization, the clustering in a place is just the effect of the variable location choices of more or less anchored companies⁶.

Some evidence on the new industries in China points to the possible occurrence of characters of local development. In Guangdong, the role of foreign multinational firms is extended, and the presence of clusters supported by local forces of development is less obvious, especially in the areas of the Peal River Delta nearer to Hong Kong, like in the prefecture of Dongguan. Though some cases more characterized by local forces have been assessed in other areas of the Delta, like in the Foshan prefecture (Qiu and Xu 2004; Long 2005). Here local business traditions, supporting industrial take-off, are found in some

⁶ Cooke (2002, p. 127) writes on the last point, referring a sensible use of the term 'cluster' to a rich meaning, tied to the idea of local development : "it is clearly no use to define clusters in terms of co-location alone as many studies in fact do. At best, such forms are Latent clusters, but are better described as agglomerations, in which firms locate because of 'localization economies' like transport or human capital, which they exploit passively rather than seeking to develop as social capital through which embeddedness, interactive learning and innovation may flourish".

specialized towns, especially where textile, clothing, shoes, furniture, ceramic industries, and the like predominate. Specialized towns with electronic industries or cluster of firms located within larger cities are more often based on external investment by large firms, looking not only for cheap labor, but also for easy access to good transport systems and logistic and trade services. In Zhejiang, another booming Chinese province, and in particular in the Wenzhou prefecture, the strength of clusters producing for internal markets has been related explicitly to the role and presence of widespread traditions of local entrepreneurships, rural craft and trade skills, SMEs, showing important similarities with models of Italian industrial districts led by local external economies (Christensen and Lever Tracy 1997; Wang 2005). In a third booming province, Jiangsu, and in particular in the Sunan region, nearby the autonomous municipality of Shanghai⁷, clustering has been characterized more by traditions of collective manufacturing enterprises (Biggeri et al. 1999)⁸.

In the next sections a statistical analysis of a data set on specialized towns of Guangdong, in particular in the Pearl River Delta, is illustrated. The analysis points to the identification of various forms of industrial development at the local level in this area, taking the model of local development both as the basis for the elaboration of pertinent variables, and as a guide in the interpretation of the results.

3. A multivariate analysis on specialized towns in Guangdong

The towns here observed have received (or are about to receive) the official designation of “specialized town”⁹ by the provincial government. Following Qiu and Xu (2004), at the beginning of this decade 122 specialized towns (STs) were identified in Guangdong Province, and some of them (among those officially acknowledged) have applied to take part to a special program implemented by the provincial government in 2003, and aimed at

⁷ Shanghai and Sunan together with the northern areas of Zhejiang correspond to the Yangtze River Delta proper – Wenzhou being more southward.

⁸ Actually some authors refer to these regional cases the presence of different models of Chinese industrialization: the Wenzhou model, the Sunan model, the Dongguan model. They could be thought as the extremes of the triangle of factors behind Chinese new industries referred to before (local forces, public hand, international business), and combined in various way with the access to cheap and disciplined labor, cheap land, improving infrastructure, large and increasing internal markets.

⁹ See note 4.

supporting the creation of innovation centers. A set of 72 STs has been defined for investigation within the “China and Italy research and learning program”¹⁰. They include those officially acknowledged in 2003 and other cases whose identity and importance has been cross-referenced. Out of this set, 66 cases have been selected for statistical analysis, considering the availability of reliable data¹¹.

The set of 66 STs here observed adds up to a total population of around 2,6 million inhabitants (that is around 3% of the total population of Guangdong Province), around 40% of them being migrants, and a total of 64,257 enterprises (China Township and Village Statistics data) (see Appendix, Table A)¹².

Data collected from various sources, and referred to years from 2003 to 2005, are used for defining indices which are elaborated through a “cluster analysis”¹³. In this section we illustrate the meaning of the data and the indices. Next section shows the results of the analysis. Section 5 goes into some details of related case studies.

The indices employed in the statistical analysis (Table 1) aim to reflect a set of socio-economic features related to the model of local development recalled just above in section 2. Of course, the indices themselves are just heroic *proxies* of the relevant features. Some important measures are incomplete or not available. However, taken together and applied to a good number of cases, these indices seem to give consistent indications, as those discussed in section 4.

¹⁰ See Di Tommaso and Rubini (2006) and the information within the Acknowledgement section.

¹¹ With respect to the data set illustrated in Di Tommaso and Rubini (2006), the cases excluded are: Dongcheng (Yiangjiang prefecture), Genglou and Zhangcha (Foshan), Gu Yao (Shantou), Huanggang (Chaozhou), Ketang (Shanwei), Minzhong (Zhongshan), while the specialized town of Longjian (Foshan Prefecture) has been added.

¹² These data refer specifically to the administrative boundaries of the principal town (or the urban district) located at the core of the specialized town, while the specialized area may also extend to a set of nearby smaller villages, rural semi-urbanized areas localized in nearby towns. It follows that the quantitative individual and aggregate importance of this set of GSTs is larger when the wider territorial units are considered. This is confirmed by the data set of Di Tommaso and Rubini (2006) which has been collected with sources referring to the wider territorial units.

¹³ Data at town or township level are taken from China Township and Village Statistics (NBS 2003), and from an archive built by Di Tommaso and Rubini (2006) on the basis of the information collected at the Department of Science and Technology of Guangdong Province (DST). These information have been integrated with further fieldwork researches (direct interview with other governmental institutions and municipalities representatives and other privileged experts), and broader researches on local newspapers and internet. The fieldwork investigation have been carried out by Annalisa Caloffi – together with the participants to the China and Italy Learning and Research Project – in April-June 2004 and April-July 2005, with the help of the South China University of Technology.

- Locality of industry. A first side is the weight of the local population as a resource for the industry. The migrant population¹⁴ is here assumed as a *proxi* for migrant workers: even if the first population does not necessarily coincide with the second one, the majority of migrants are workers compelled to migrate from poor rural areas (usually from internal Chinese provinces) to richer coastal regions (Ma and Lin 1993; Yao 2001). A lower ratio of migrant population [MIGRPOP] suggests a higher involvement of the local population in the local specialized industry. This is a first sign related to the presence of conditions which in section 2 have been associated to the idea of a locality of industry. Stronger localities of industry should present a fairly well developed set of complementary activities around the manufacturing industry, in particular a set of business services. The proportion of the output value produced by the tertiary sector on the total value of the local economic activities is used here as a *proxi*. Even if the index refers to the tertiary sector as a whole, it gives us a rough estimates of the economic structure of the different specialized towns. Given that the observed set of STs does not include large urban areas (we are dealing mainly with small town with a strong industrial character), a higher level of the index legitimate us to expect a larger development of business services [TERTIAR].
- Sectoral specialization. Each specialized town is coupled with a principal sector of activity, generally in manufacturing industry, defined statistically at the second digit level. This sector is defined as the “specialized industry”, or as the industrial cluster characterizing the area. A relevant feature concerns the weight of the activities of the specialized industry within the locality. It is considered the proportion of the industrial output produced by the specialized industry (in value) to the industrial output produced in the town [SPECIND].
- Weight of external firms and related public support. Another feature qualifying the configuration of the industries within the town concerns the local role of external

¹⁴ The official statistics (Fifth Population Census) define the migrant (or floating) population as the “population whose census registration place is different from the household registration place and whose household registration place is under the jurisdiction of other counties, county-level cities or cities at prefecture level in or out of a Province” (NBS, GSY 2003, p.82)

businesses. A first side here is the proportion of the foreign enterprises on the total number of local (non micro) enterprises [FOREIGN]; a complementary one is represented by the creation of industrial parks, usually targeted at attracting foreign investors or plants of big Chinese companies (Eng 1997; Li 2001; Yeung 2002; Walcott 2003). [INDPARK].

- Local firms and related public support. A final feature touches upon the presence, extent, and nature of the fabric of local firms, particularly within the specialized industry that could be the core of a local production system characterizing the area. Reliable data measuring directly this feature are hard to find at the level of the town. However an aspect which is easily associated to a well developed or developing fabric of local firms is the promotion of local competencies within the specialized towns. A first related side on which data are available is the creation of innovation centers or other collective infrastructures devoted to the promotion of the innovation. Business associations, local leaders and national or provincial specialized research centers are often involved, aiming at supporting the local fabric of SMEs¹⁵ [INNOCEN]. A second side is the access to external markets. One of the most common policies realized by local governments supports the creation of local trade markets. They may differ in size (from a whole district or neighbourhood to one or more buildings) and in terms of function they host (wholesale trade, logistics and transportation, exhibition centres...). In any case they may provide local SMEs with an alternative channel (to those of big clients or providers) to reach the market for purchasing inputs and selling products¹⁶ (see note 12). When the creation of this kind of infrastructures is strongly targeted on the specific sectoral specialization of the local enterprises (creation of specialized trade markets) it take the form of a cluster-based policy [SPECTMK].

¹⁵ See for example Qiu and Xu (2004); Caloffi and Hirsch (2004).

¹⁶ In some cases, local governments have implemented specific policies in order to favour the re-localization of specialized enterprises coming from other provinces or counties inside the local trade markets. This has happened, for instance, in Longjian (Shunde district; Foshan Prefecture), specialized in furniture production, where the local government has funded the re-localization of producers of components and instrumental machineries for the local specialized industry (South China University of Technology 2005). On the importance of local organized markets in the take-off of cluster of local SMEs in Wenzhou see Wang (2006).

Table 1. Indices and source of data

| Indices | Description |
|---------|---|
| MIGRPOP | The proportion of the migrant population to the total population of the town (year 2003). Source: China Township and Village Statistics (NBS, 2004). |
| TERTIAR | The proportion of the output value of tertiary sector to the output value of the whole local economic activities (year 2003). Source: Di Tommaso and Rubini (2006) on Guangdong Department of Science and Technology (DST) data, and fieldwork investigation ¹⁷ . |
| SPECIND | The proportion of output value produced by the specialized industry to the industrial output value of the town (year 2003). Source: Di Tommaso and Rubini (2006) on DST data, and fieldwork investigation. |
| FOREIGN | The proportion of wholly foreign enterprises (WFO), JVs and other forms of foreign or sino-foreign enterprises to the total number of (non micro) enterprises of the town (year 2003). Source: Di Tommaso and Rubini (2006) on DST data, and fieldwork investigation. |
| INDPARK | Proportion of land area occupied by industrial parks, innovation park, and other economic zones on the total area of the town (sqkm) (year 2004). Source: fieldwork researches, local newspapers (China Daily, South China Morning Post, various years) and broader researches on the internet (mainly local government web sites). |
| SPECTMK | The proportion of specialized trade markets on total trade markets of the town (year 2003) Source: China Township and Village Statistics (NBS, 2004) and fieldwork investigation. |
| INNOCEN | Number of innovation centres, research centres, technology transfer centres of the town (year 2004). Source: fieldwork researches, local newspapers (China Daily, South China Morning Post, various years) and broader researches on the internet (mainly local government web sites). |

Source: Our elaboration

Different combinations and different intensities of the above mentioned characters are the signs of different forms of industrial development among the STs, more or less related to local development. The proxies are elaborated through a multivariate analysis (of the “cluster” type) aimed at defining a typology that is not purely descriptive, since the identification of the variables and the interpretation are led by the common reference to models of local development. The results are illustrated in the following section 4.

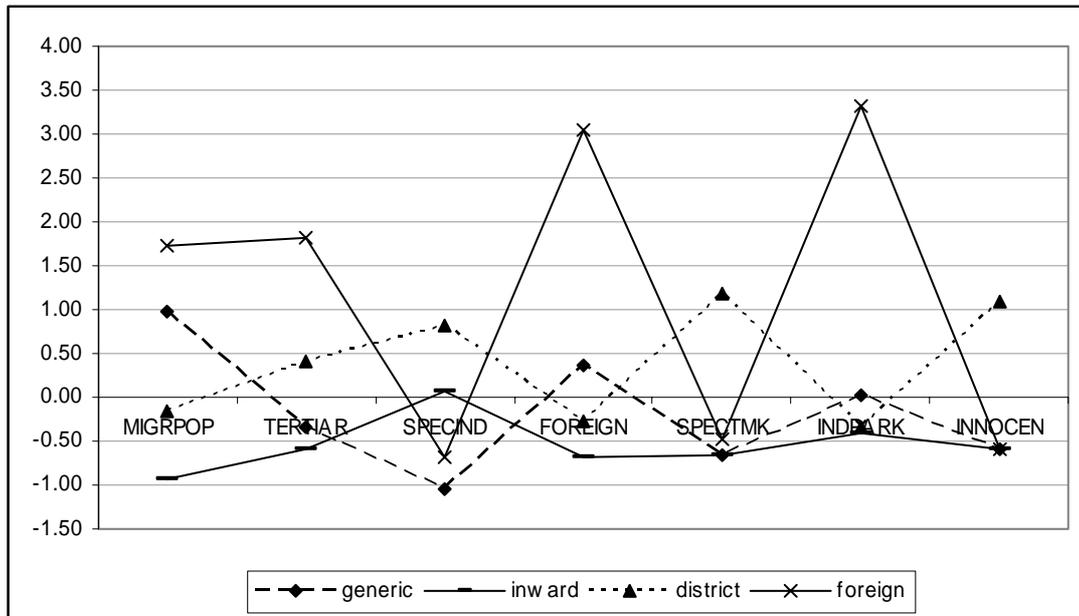
4. Four types of specialized towns in Guangdong

Drawing on previous reflections, the main results of a cluster analysis carried out on 66 STs are here presented (see Appendix for further details). In what follows the statistical

¹⁷ These data are collected by the Guangdong Department of Science and Technology, which has implemented a specific funding program aimed at supporting the development of the specialized towns. The comparison with collateral data available at town and township level provided by the national bureau of statistics (e.g. population, number of enterprises, ...) and fieldwork investigation on selected cases let us conclude that in some cases DST data refer to a wider territorial unit (see note 11).

clusters are referred as “groups”, in order to avoid confusion with industrial clusters. The analysis leads to the identification of 4 “groups” of specialized town (Graph 1)¹⁸:

Graph 1. Means of the 7 indices in the 4 groups



Source: Our elaboration

- The “generic” manufacturing bases [GENERIC]. The first group is composed by a set of 16 STs which show a relatively low level of specific manufacturing specialization. The (relatively) scarce development of the local tertiary industry and the limited weight of trade markets suggest that the group identifies the “typical” assembling platforms, possibly with a fabric of local suppliers largely dependent on large clients¹⁹. Following

¹⁸ At a first stage, in order to identify the “optimal” number of clusters, we have used a hierarchical agglomerative algorithm. Four clusters have been identified on the basis of the observation of the Calinski and Harabasz value (as provided by Stata software) for cluster solutions and of the cluster tree. At a second stage, we have used a k-means technique in order to ameliorate the composition of the 4 clusters previously identified (see tables B-C Appendix). This analysis has been elaborated at first within Caloffi (2005).

¹⁹ The specialized town of Shijie – belonging to this group – offers a typical example. The specialized town has developed around the presence of a foreign (Taiwanese) enterprise, which directly employs about half of the local specialized employees and organize the activity of several (dependent) assembling enterprises, providing them with components and machineries. The group includes also GSTs whose activity is not so dependent from foreign enterprises. It is the case of Nantou, where a set of Chinese large enterprises

the definition offered by Humphrey and Schmitz (2002), most of these clusters are inserted within quasi-hierarchical global value chains, where foreign clients/buyers specify what, how and how much it is to be produced. For the STs belonging to this group, the possibilities of upgrading and development of more sophisticated and autonomous competencies rely on the quality and the kind of linkages (goods and knowledge flows) between local and non local enterprises. Deeper investigations carried out on some of these cases suggest that paths of emancipation are possible, even if empirical evidence is still limited²⁰. Public policies can play a role, given the growing concern on the increasing competition coming from other Chinese areas, with a larger access to cheap labour. However, policy action is still strongly focussed on keeping foreign investors in loco, granting financial incentives and tax breaks, and building generic infrastructures.

- The inward-oriented areas [INWARD]. This group, which includes 22 STs, is more characterized by the specialized industry than the previous one. However, local collective action aimed at realizing specialized infrastructures supporting trade or innovation seems not (or not yet) developed²¹. The group includes a number of “traditional” areas (Long, 2005): many of them are specialized in agriculture-related products, while others are specialized in textiles, garments or footwear production. According to fieldwork information, it seems that in these cases tend to prevail local enterprises (mostly local-owned enterprises) producing low to medium quality goods mainly directed to the internal (and Provincial) market, or local agglomerations of sub-providers dependent to the activity of their (foreign) clients. Most of these clusters do not seem to be inserted within global value chains, the relations with foreign clients

specialized in the production of electrical household appliances have their manufacturing bases (Di Tommaso and Rubini, 2006).

²⁰ This seems to be happening in Shijie, where some ex-managers (mostly of Taiwanese origin) of the leader enterprise have founded autonomous enterprises (data collected by field work investigation conducted with the help of South China University of Technology – see note 11).

²¹ The lack of collective infrastructures and that of an adequate tertiary segment at local level is worsened by the fact that most of the GSTs belonging to this group are characterized by micro and small enterprises (27.3 on average, following the data provided by the China Township Statistics). The lack of local collective infrastructures – which often parallels the lack of such infrastructures at Prefecture, City and County level – doesn’t seem to be counterbalanced by the development of capacities internal to single local companies.

involving only some of the enterprises of the clusters. At present, their production does not take a direct competitive challenge to Italian (and European) industrial clusters.

- The proto district areas [DISTRICT]. The group includes 23 STs where the activity of the local-owned enterprises is strongly focused on the specialized industry. The presence of a rich tertiary sector and of different kind of infrastructures for the specialized enterprises (trade markets, exhibition centres,...) suggests that the local enterprises may find in loco the various connections with external markets. Foreign firms seem to have not a clearly dominant role, as fieldwork research confirms. Local collective action supports the creation of innovation centres, often as a consequence of the special policy promoted by the DST²². The group includes the most famous STs, such as Nanzhuang, Dachong, Xiqiao, Shiling, Pengjiang, the majority of which are specialized in the typical “Made in Italy” productions. According to fieldwork research here the specialized industry has often a local tradition rooted in the past, and is mainly based on the activity of local-owned enterprises producing medium quality products. Many enterprises have developed their own brand, which are relatively well-known at provincial or even national level²³. Some of these clusters are inserted within global value chains. The relation between local producers and foreign buyers may develop on the market, or it may take the form of a closer interaction, where the latter specify a series of product (and sometimes process) standard to be met. Market or networked forms of interactions with foreign clients are more common than quasi-hierarchical forms. The combination of local specialized competencies and collective infrastructures supporting the enterprises in entering the market give the local enterprises of the clusters a certain degree of autonomy in the relationship with foreign buyers.
- The foreign-driven growth poles [FOREIGN]. The last is a small group (5 STs) that differs from the others for the (relatively) high incidence of the foreign enterprises. The

²² This is, for instance, the case of Xiqiao (Foshan Prefecture, Nanhai district), recalled in section 5, where the supportive action of the local government seems to be particularly relevant, even if not strictly linked to the official designation of specialized town (Zhongshan University 2004; Caloffi and Hirsch 2005).

²³ The introduction of an index such as INNOCEN may bias the result of the cluster, by tiding together a group of towns possessing this feature. However, it is a kind of “bias” that we explicitly want to take into account, since it is connected to relevant forms of local collective action (section 3). Moreover, a “district”

group includes the most developed areas of the Province (both in terms of GDP per capita and of industrial output value), localized in the Dongguan Prefecture, adjacent to the Special Economic Zone of Shenzhen and close to Hong Kong. Local policies are basically oriented to the attraction of foreign investors, as exemplified by the importance of industrial parks. The high incidence of the migrant workers characterizes this group. The pool of cheap labour fuels the productive capacity of the foreign enterprises (and, obviously, also of local-owned ones). This combines with a relatively strong development of the tertiary sector, based both on the activity of independent enterprises and the presence of trade markets, while collective services for innovation in the local SMEs tend to be weak. The group of industrial clusters here observed is fully included within global value chains, mainly of quasi-hierarchical type. The foreign clients are here part of the clusters and they often exert a strong control over the production of the local enterprises. However, the strong relations between foreign and local enterprises may also facilitate the transfer of technical knowledge and business practices between the two, therefore expanding the possibilities of cluster upgrading. Again, these possibilities rely on the quality and the kind of linkages between local and foreign enterprises. Deeper investigations carried out on some IT clusters included within this group still provide a limited evidence of success stories²⁴.

The cluster analysis offers a framework for deeper investigation in the Chinese models of local development. A closer examination of some cases helps in specifying the different kinds of competitive challenge taken to Italian districts-like industries from Chinese new industries.

group similar (even if smaller) to the previous one can be detected even when the cluster analysis is performed without that index.

²⁴ The STs specialized in the IT sector we have observed are involved in computer-making global value chain. Their activity is mainly focussed on the assembling of the products, following the design and the components provided by their foreign clients, mainly Taiwanese enterprises localized within the Chinese clusters. Our empirical investigation shows that only in some cases the Chinese enterprises have gradually developed more sophisticated activities, moving towards the production of some (initially low and then higher) value added components. Focussing on the same provincial area, even if on different clusters, Enright *et al* (2005), have found (and envisage) a larger range of success stories. However, they make reference to (partly) different local contexts, more strongly characterized by a rich tertiary segment and by education infrastructures.

5. Three case studies

An example of the differences between Chinese local industrial bases is illustrated by Caloffi and Hirsch (2004) comparing three industrial clusters belonging to the fashion industry in Guangdong. Two are the main industry of a specialized town, i.e. Pingzhou and Xiqiao (Nanhai District, Foshan Prefecture), while the other is just one of the various industries located in the territory of the biggest city between Guangzhou (Canton) and Shenzhen, that is Dongguan. Xiqiao offers an example of the specialized towns belonging to the “District” group, while the industrial cluster of Dongguan may be considered as an example of the foreign-like model of development, even if has not been included in the previous analysis, since Dongguan is not a specialized town but a big city. Pingzhou (hosting a footwear cluster) is an example of the “Inward” oriented areas, even if in transition.

Xiqiao industrial cluster is composed by 1,670 private enterprises specialized in textile and clothes made by artificial fibers, hiring 60,000 workers (that is around 50% of the total workforce of the town) (Zhongshan University, 2003). The specialized industry seems to be quite embedded in the local context, with the handcraft tradition in textile manufacturing dating back to the Ming Dynasty. The modern development of the cluster is linked to the activity of local entrepreneurs that have set up their enterprises in town. At present, the large majority of the local enterprises are owned by local entrepreneurs and many of them produce and sell their products with their own brand, mostly on the national market. Most of the local enterprises operates within the local specialized market, a large area created by the local and provincial governments which hosts several shops and a logistic centre. The local innovation centre - created in 2000 – provide the enterprises with some basic services in design, quality testing and technological assistance.

Private Chinese-owned enterprises represent the majority also in Pingzhou (600 specialized enterprises, with 100 employees on average). They realize mainly medium-low quality leather shoes, and to a lesser extent also sport shoes, mostly producing as subcontractors for Taiwanese entrepreneurs. The latter are present in Pingzhou, managing the biggest enterprises of the cluster. Around 50% of the total production of the cluster (in

quantity) is exported. The main markets of export are Taiwan, Hong Kong, other South East Asian countries, Russia and Africa.

Also in Dongguan footwear industry (1,200 specialized enterprises, with 250 employees on average) the Taiwanese presence is considerable; however what mostly characterises the cluster is the strong presence of big multinational companies. The local footwear enterprises in Dongguan are private and work as subcontractors for foreign firms, not only for Hong Kong and Taiwanese companies but also for well-known international brands. The large presence of migrant workers fuels the productive capacity of the foreign enterprises. Although Dongguan is one of the youngest Guangdong shoes manufacturing bases, it has today a leading position in export activities, and it is dominating China's export of relatively high-quality shoes, followed by Shanghai. The exposition centers, including footwear and shoe material exposition, have rapidly grown in the last decade, and today they rank among the most famous in the Mainland.

Particularly in Dongguan and Pingzhou the activity of the firms is focused on the assembling of the shoes, following the design provided by the clients. Even the materials are often provided by the client and - to a lesser extent - also the technology. Therefore, the internal organization of the firm is simple in both clusters. The main difference regards the type of clients the enterprises produce for, both influencing the quality level of the product, and obviously the export markets. As Dongguan footwear firms produce for renowned brands, the product is often of higher quality and it is sold in a vast range of international markets. The linkages with foreign enterprises may also influence positively the level of technology of the Chinese enterprises, the international clients being able to introduce/transfer new technologies, machineries and knowledge (Caloffi and Hirsch 2004).

So, the capacities to produce medium quality goods at low cost and sell them at good price on international markets are under the strategic control of those international companies (Bailey et al. 1999, Schmitz 2004). Their organization allows the combination of standardized manufacturing in China with technological innovation, differentiated design, and top class marketing on global markets, realized in Europe or U.S.A. Such international capacities are complemented in the Chinese clusters by the growth of local entrepreneurs. They learn basic management and marketing skills, working as

subcontractors of the large international firms. On this base they rapidly develop some industrial and market capacity, independent from the orders of the international firms, even if based on imitation at least at the beginning.

This capacity may be enhanced by the presence of a focussed policy action, as we can detect in District-like areas such as Xiqiao. As shown by some researches (Unger and Chan, 1999), the local government has played a developmental role in the industrialization process of Xiqiao, and has favoured the flourishing of the textile industry. The central government directives have been applied often in the most favourable way for the local economy. Particularly from the mid-1990s, the local government activity is focused on innovation of the local industry, promoting a broad range of services for the specialized enterprises²⁵. Moreover, it has actively promoted the constitution of a broader group of local public services (such as schools, nurseries or medical clinics) to support the local development.

In the case of Pingzhou, such a supportive policy action can be detected only partially. The local political leadership seems to perceive that the shoe cluster specialization in low quality products, mainly sold to national markets, is sustainable only if the inflow of poor temporary workers (ready to accept bad salaries and job conditions) keeps on working; and that the mechanism is threatened by the possible growth of other local bases for the shoe industry, just in the poorest Chinese internal areas, where many temporary workers come from. Therefore, in 2004 the local government has promoted the realization of a local innovation centers with the aim of upgrading the capacities of the local enterprises. The project has already experimented some difficulties and the activity of the centre has never really started²⁶. At present it is administrated by a private Chinese enterprise, the biggest shoemaking firm located in Nanhai

²⁵ Such as the aforementioned innovation centre and specialized trade market, but also some funding programs for the renewal of the machineries and the diffusion of CAD technologies.

²⁶ The establishment of the Centre has been the result of a planned activity, without carrying out any previous market research and without any attempt to involve the local enterprises: local government chose managers, employees, kind of services to be offered. Therefore, one of the most relevant problems that the centre had to deal with is that of matching up with a demand for its services, as the enterprises often do not perceive the importance of the services offered by the centre. Moreover, in some cases the staff of the centre is not skilled enough, neither to offer qualified services nor to identify external consultants (Caloffi and Hirsch, 2004).

Even if quantitative data are lacking, it is pretty sure that all types of clusters contribute to the competitive challenge taken by the Chinese industry to the shoe clusters of other countries, and in particular to those characterizing some Italian industrial districts. However the quality of the challenge and its sources are different. In the case of the Dongguang shoes clusters, and more generally in the case of the specialized industries of the FOREIGN-driven growth areas, the capacities to produce medium quality goods at low cost, and sell them at good price in international markets, are largely controlled by the international companies. The international capacities may be complemented by the growth of local entrepreneurs working as subcontractors of the large international firms. The public support in building exposition centers and trade facilities gives a consequent contribution.

The case of Xiqiao confirms the identification of the forces at work in what we have called PROTO-DISTRICT areas. The competitive challenge taken by this group is not simply directed – at least in perspective - against the Italian production but it also extends to the core of the “district technology”. The jump over a higher road of development not dissimilar to those taken at the beginning by Italian industrial districts has some possibilities to succeed here, given the density and tradition of local entrepreneurship and the focused action by the local and provincial government..

6. Chinese challenges to Italian type- districts and ways of reaction

At a general level, and considering recent Italian debates²⁷, it is plausible to say that the extent of the Chinese challenge is felt in various ways within and among Italian industrial districts. Competitive threat is not impending for districts and producers positioned on high quality products, where the mix of intangible services, creativity and technology is not easily transferable nor imitable.

While threat has been real, for some years, for large part of the low-to-medium quality manufacturing producers. It comes from capacities localized in China for producing long series of standardized products at very low costs. These capacities reside quite naturally within clusters of the type found in the GENERIC and in the FOREIGN DRIVEN bases,

both within specialized towns and in the industrial parks of special economic zones of large cities. The threat has a fundamental pillar in the FDI and buying activities carried out by big U.S.A. and European companies, Italian ones included, operating as leading actors within hierarchical or quasi-hierarchical global value chains. Medium quality products come from China to the shelves of big retailers in American and European markets, showing the corporate brands of the large manufacturing companies or of the retailers themselves. Sometimes they come with “made in Italy” or “stylized in Italy” labels if they take some input from Italian productive and design capacities. Chinese products with fake labels and brands are also diffused, generally outside the networks of big retailers. It seems plausible that they come mainly from the development of the independent industrial capacities of Chinese subcontractors, like those in Dongguan, combined with the action of western traders.

The more dangerous threat is perhaps at the horizon, thanks to the combination of international value chains and the development of local capacities for quality and innovation in FOREIGN DRIVEN bases, and especially in evolving PROTO-DISTRICTS, hitting large sets of market niches where strong Italian districts sell medium to high quality products, that is the core of Made in Italy.

Decline in many Italian industrial districts cannot be dismissed as impossible. It could show two typical paths. First, the main local production system of the district is hollowed out of manufacturing capacities, and the district becomes an area specialized in the trade of specific classes of products for more or less extended national and international markets. But this function too is easily lost in perspective, with the growth of the competencies of the new manufacturing areas. Second, the local production system shrinks and specializes in small niches of products of ever higher quality and price, losing the capacity to characterize the economic and social life of the old locality of industry. In order to avoid these paths successful strategies by single firms are not enough. Successful reaction imply systemic strategies, since separate strategies easily bring about the results recalled just above.

²⁷ See for example various chapters in Cainelli, Zoboli (2004) and in Di Tommaso, Bellandi (2006).

The industrial and trade reaction, aimed at increasing the local competitive strength against the Chinese challenge, includes business strategies and related institutional support along lines which present both general and specific characters. Three general lines are recalled normally within the debates on globalization and challenges to Italian districts, to be played more or less together: a) strengthening the local capacity to produce and sell products of high and medium quality, and promoting the association with intangible aspects or services difficult to transfer²⁸; b) building local capacities of international management for realizing or purchasing some parts of final and intermediate standard goods in other more specialized localities and clusters²⁹, while preserving the control of the *filière*; and c) reaching scale thresholds in trade and distribution channels, and getting directly to international market, partly reducing the dependence from large traders and large manufacturing firms³⁰.

Lines of reaction specific to China, a part from the invocation to EU for providing or allowing various types of protection against dumping and fake products, concern the opportunities to play with the dragon, that is the application of the general lines of reaction to the growing Chinese markets. The demand side could be promising for made in Italy, considered the growing set of Chinese wealthy urbanized consumers. But Chinese markets may be segmented, and normally are quite expensive to reach - geographical, institutional, and cultural distance representing a high barrier for SMEs. If opportunities to sell are present, their exploitation demands, a part from restricted fashion niches, non-light trade or industrial investments directly in China; the constitution and maintenance of joint-ventures and institutional relations with Chinese private and public counterparts; the strengthening of the local capacities for innovation and quality. In other words, with China, export channels need to be supported by a stable presence in place, through international investments. A similar type of problems concerns the access to the capacities of Chinese producers to supply components, semi-finished products and final goods, if something different from very standard or low quality is looked for.

²⁸ Like, in the case of Made in Italy, the image of taste for beauty, good quality of life, love for well done craft jobs, creativity, etc.

²⁹ See Casson (1997) on the development of entrepreneurial network in international business.

The possibility for industrial districts, as such, to reach these results is questioned in many quarters within Italian debates (e.g. Onida 2004), the alternative being the exit from the model of local development, with the growth of the size and the resources internal to single firms more or less dis-embedded from the locality.

However, the same presence of district characters in some Chinese specialized towns suggests the way for internationalization paths consistent with a qualified preservation of the logic of local development. We defer to other publications a deeper discussion of this point³¹. Just to give a clue, let us suppose that a Chinese specialized town have the potentiality to develop district processes (like possibly in PROTO-DISTRICT areas), and that links with the competencies and products of one Italian district be identified. Then a set of interrelated investments may be driven by a district medium-sized firm and/or by a district team of smaller but dynamic firms. The set creates a field of strong district relations that may then contaminate and expand in the potentially propitious environment of the specialized town. This would supply to a larger set of – let’s say - Italian district firms the possibility to enter in relation with Chinese partners, for joint trade or production projects. The risk of transferring strategic components of the “district technology” has to be considered too. In fact, these strategies have to be played together with the strengthening of local capacities to innovate, to combine manufacturing skillfulness and intangible services, etc. It is not “de-localization” but “re-localization”. And of course adapted forms of institutional support and collective action at various levels are needed, in particular for building appropriate specific public goods, both at the local and trans-local level.

7. Conclusion

In the contemporary wake of globalisation, many Italian (and European) SME based-production systems, in districts and other localities of industry, have been hit by a growing competitive challenge coming from new industries: for instance, industries having a

³⁰ It is quite clear that international trade or industrial strategies without a local base of competitive strength and institutional support are at risk. They assume the nature of “simple” de-localization strategies, easily taken over by transnational companies or leading to local de-industrialization.

³¹ Some premise in Di Tommaso and Bellandi (2006).

territorial base in some Chinese regions, utilizing digital communication and advanced logistic solutions to manage productive and commercial global supply chains.

In such a scenario, Italian SMEs and districts are required to implement complex and comprehensive strategies. The answer to the competitive challenge relies on the growth of inward capabilities in realizing innovations and in improving quality. But, this may bring about only fragmentation and de-localization within the SMEs based- production system. An appropriate answer at the level of the production system, in terms of an increased collective capacity for innovation and combination of manufacturing resources with intangibles goods needs large and stable investments in new competencies, logistic structures, institutional linkages. A key feature is the extension of organizational relations beyond the single local area where a production system is embedded.

The sentences included in the last two paragraphs reflect a sort of common wisdom shared by scholars who have been studying Italian industrial districts, and the like, with a sympathetic attitude towards models of local development and their changing features. The evidence and results of the campaign of researches on China and Italy, which this article is part of, do not contradict these points. The main qualification refers to the bases of the specific competitive challenge brought by Chinese new industries to SME production systems, districts and the like, in Italy and elsewhere. The bases include various combinations of heavy public hand, international business, and local forces, and show themselves clearly at the level of the many cases of specialized towns and clustered industries scattered in the booming Chinese regions. The challenge is strong, even in perspective, since the same bases support a constant upgrading of capacities, some of them similar to those that have featured Italian districts. Though some internal contradictions, if not managed appropriately, could slow the pace of the upgrading.

This article in particular has proposed a closer examination of some aspects of the challenge, through the illustration and the results of a statistical analysis on a data set of Chinese specialized towns. The analysis and the interpretation have been driven by the reference to models of local development and industrial districts. The analysis could be improved in various ways, with the possible acquisition of new data, for example on specific characters of the firms at the level of towns. However, the results appear already to

be quite consistent and comforted by fieldwork experience. They could be resumed in four points:

- a) the application of statistical analysis on Chinese new industries at the level of specialized towns gives a robust confirmation of the existence and features of various forms of industrial development in Chinese specialized towns, in Guangdong in particular;
- b) the classification and understanding of such forms may be helped by the reference to models of local development and industrial districts, characterized as they are by the concepts of locality of industry, local production system, sectoral specialization, local strategic control, de-centralized business governance;
- c) among the various cases, the challenge to Italian districts and the like may come both from forms showing features far from the model, i.e. the so-called foreign driven industrial bases, and from forms nearer to the model, i.e. the so-called proto-districts;
- d) and, these forms show consistent features, confirming the strength of the challenge, even in perspective, but they also give clues for strategies of internationalization promoted by district business and public agents, and aimed at finding partnerships within Chinese new industries.

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APPENDIX

Table A. Description of indices (non-standard data)

| Indices | N.ST | Minimum | Maximum | Mean | St.D |
|---------|------|---------|---------|------|------|
| MIGRPOP | 66 | 1.2 | 96.0 | 38.2 | 24.7 |
| TERTIAR | 66 | 6.9 | 43.0 | 23.3 | 10.0 |
| SPECIND | 66 | 30.0 | 93.6 | 53.3 | 19.8 |
| FOREIGN | 66 | 0.0 | 81.0 | 16.3 | 20.1 |
| TRADEMK | 66 | 0.0 | 75.0 | 19.3 | 24.4 |
| INDPARK | 66 | 0.0 | 25.6 | 2.4 | 5.8 |
| INNOCEN | 66 | 0.0 | 1.0 | 0.3 | 0.4 |

Table B. Means of the 7 indices in the 4 clusters (standard values; k-means method)

| Indices | Generic(1) | Inward(2) | District(3) | Foreign(4) |
|---------|------------|-----------|-------------|------------|
| MIGRPOP | 0.985664 | -0.938139 | -0.163384 | 1.725255 |
| TERTIAR | -0.332010 | -0.600064 | 0.409813 | 1.817571 |
| SPECIND | -1.052669 | 0.063124 | 0.821245 | -0.686932 |
| FOREIGN | 0.367553 | -0.673186 | -0.276126 | 3.056032 |
| TRADEMK | -0.663614 | -0.651979 | 1.188097 | -0.472972 |
| INDPARK | 0.024287 | -0.413561 | -0.342232 | 3.316219 |
| INNOCEN | -0.584536 | -0.584536 | 1.092828 | -0.584536 |

Table C. Distance amongst the centres of the cluster

| Cluster | 1 | 2 | 3 | 4 |
|---------|---|-------|-------|-------|
| 1 | 0 | 2.509 | 3.489 | 4.838 |
| 2 | | 0 | 2.925 | 6.431 |
| 3 | | | 0 | 6.155 |
| 4 | | | | 0 |