

5. Chinese industrialization, planning and policies: local growth and global equilibria

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INTRODUCTION

China has acquired a core role in global manufacturing, becoming the center of global networks of production. On the one hand, this position is the result of the planning and policy efforts of the national government to promote growth and structural change. On the other hand, to achieve such results, the Chinese policy actors have deeply interacted with overseas capital and interests that entered the country and made use of its social, human, economic, policy and environmental resources to build some of the most important hubs of production worldwide. In this scenario, the interplay between the Chinese (national, regional and local) governments and international interests has shaped the national mode of production of contemporary China.

A special example of such a dynamic is represented by the growth trajectory of Southern China, particularly Guangdong. Half as large as Germany but with 20 million more people, Guangdong has acquired a central role in the national economy and, in the last decades, also in the international context. This province is the first in terms of contribution to national gross domestic product (GDP) (10%) and exports (nearly 30%) and the second for foreign direct investment (FDI) attraction (about 15%) (NBS, 2015). Nowadays its economic performance is comparable to those of some important Organisation for Economic Co-operation and Development (OECD) countries: for instance, its export value is not far from that of Japan, its import value is between that of India and Belgium, and the GDP figures are comparable to those of Poland or Australia¹

¹ The data on Guangdong are from NBS (2017), while those on countries are from UNCOMTRADE.com and OECD.com, retrieved on May 4, 2018.

(Barbieri et al., forthcoming-b). The path of industrialization of this province is characterized by an intense spatial agglomeration of firms and industries, in both rural and urban areas. Impressive data refer to the sectoral specialization of these agglomerations, to their “volume” (in terms of number of both industries and workers), and finally to their capacity to attract foreign investors, initially from Hong Kong and Taiwan, and subsequently from all over the industrialized world. This geography is the result of different and interlinked dynamics; some of these clusters in fact relate to explicit and planned choices, others to a spontaneous flourishing of the private sector or to the complex processes of transformation of public and collective ownership (Bellandi and Di Tommaso, 2005; Barbieri et al., 2015).

There is little doubt that Guangdong’s economic performance is deeply linked to the joint action of governments, at both national and local level. The national authorities selected this area to experiment with the opening to foreign market forces and with the geography of production since the beginning of the open door policy, assigning to provincial policy-makers a growing level of autonomy (Di Tommaso et al., 2013a). The local authorities have gone ahead with the experimentation path designed by national policies to promote industrialization and growth in specific policy frameworks, which in many cases have become pioneers at the national level. Spatially targeted policies are a large part of this story (Zheng et al., 2016; Barbieri et al., forthcoming-b): since its targeting as one of the key regions of the open door policy, Guangdong has fully and deeply experimented with a variety of these tools (Barbieri et al., 2012).

In this chapter, we focus on one particular initiative: the “specialized towns” program. Since the launch of the program in 2000, the number of specialized towns (STs) has constantly grown, reaching a total of 416 in 2016 and becoming the backbone of Guangdong’s industrial growth according to its policy-makers (Su and Sun, 2016). In 2015, they accounted for 37% of the provincial industrial output and 32% of the total export of the province, but in some prefectures (for example, Foshan, Dongguan, Zhongshan) their contribution was close to 100% of the output; taken together, they produce nearly US\$384 billion a year (GDASS, 2017). A high number of the manufacturing towns included in the program are examples of places where the alliance between Chinese and global goals has clearly been successful in incentivizing growth and industrialization. Indeed, some of them have become global production hubs, where huge quantities of manufactured goods are realized to respond to the international demand. Such towns have historically seen a strong intervention of overseas capital and actors. The national and local governments’ actions have largely interacted with this production framework to plan and

enhance industrial and economic performance, contributing to production efficiency, innovation, competitiveness and structural change.

Our aim in this chapter is to offer detailed and unique analyzes on the experience of STs. After having framed it in the literature debate, we focus on the description of the policy, on its tools and evolution in time, and then on the trends of its spatial and sectoral distribution. To better describe the STs phenomenon in terms of economic and social achievements and limits, we concentrate on three cities (Dongguan, Foshan and Zhongshan) whose economic activity is dominated by STs. We conclude with some remarks about the challenges and perspectives of the program, that also set the future research agenda on the topic.

The analysis in this chapter is largely the result of lengthy research carried out by the authors on this topic, developed through a repeated series of fieldwork in Guangdong and in its STs, the last of which was held in July–September 2017. The fieldwork has allowed the authors to collect data and policy documents on-site, but also and above all to interview and discuss with several policy actors at various levels (provincial, city and townships), scholars and company managers, and to see first-hand, the results and the evolution of the STs program. These areas strongly contribute to national GDP, and exports and in some specific products (smartphones, suitcases, toys only to name some) they cover a large portion of global production. It is therefore crucial to study the development trajectory of such territories to better understand the global consumption–production equilibria and the extent to which they trigger either inclusive innovation processes or mere exploitation of places.

THE RELATED LITERATURE DEBATE

The experience of STs reflects policies and practices to some extent inspired by, or related to, different streams of international literature. We can identify at least three types of contributions that should be taken into account in this sense. The first is the literature on industrial agglomerations (starting from Marshall, 1890 [1961]). A key role in this respect is played by the analyzes of the historical evolution and features of Italian districts, that have highlighted the role of joint actions and collaborations in industrial agglomeration that produced the “industrial atmosphere” constituting their source of competitiveness (Becattini, 1998; Becattini et al., 2009; Sforzi and Lorenzini, 2002; Bianchi, 2017). The literature on Italian districts has been then transposed in the international debate and has become an ideal-type for the analysis of industrial agglomerations (Pyke and Sengenberger, 1992), also with respect to developing countries

(Nadvi and Schmitz, 1994). More recent contributions start from the literature on clusters and agglomerations to develop new insights, such as those coming from the new economic geography and the related variety literature (Boschma et al., 2012; Content and Frenken, 2016; Fujita and Krugman, 2004; Ottaviano and Puga, 1998). These authors have focused on industrial agglomerations to analyze the linkages between inter-industrial spillover, knowledge flows and division of labor at the regional level. Although ST policy initiatives explicitly take into account these contributions, and in particular that of the Italian school of districts, an important difference needs to be considered while analysing this phenomenon. Indeed, STs are generated as an *ex post* initiative promoted by the central provincial government, where local policy-makers are explicitly requested to participate in the program and to demonstrate that they fulfill the requirements (for example, a minimum degree of specialization). However, these townships appear to miss many other features of the district experience, that relate in particular to the existence of a community of firms and people that gives rise to the industrial atmosphere. On the contrary, Guangdong clusters are often the result of the joint action of planned policies on one hand, and on the other hand of external forces such as foreign capital and migrations, that make these agglomerations very far both from the Italian real experiences of districts and from the ideal-type that has been developed by the international literature.

A second stream of the international debate that seems to be very useful in the interpretation of the STs experience is that related to industrial policies, intended as the set of tools and initiatives able to interact with market forces to pursue the structural transformation and upgrading of the economy and the promotion of general industrial, economic and societal objectives (Chang, 1994; Cimoli et al., 2009; Di Tommaso et al., 2013a; Di Tommaso and Schweitzer, 2013; Rodrik, 2004). Indeed, China and, as we shall see, the STs initiative, are among the clearest examples of the role that industrial policies can play in order to achieve various societal targets. However, it should be also underlined that the relationship between market and state that is typical of capitalistic societies holds to only a limited extent in the Chinese experience, since this is largely characterized by an economic organization based at all levels upon the Five-Year Plan long-term strategy.

Thirdly, the bottom-up relationship between policy actors, typical of the STs, together with the recent trend of tailored policies that we will analyze later in the chapter, recall the literature about place based policies that has recently emerged in the international debate (Bailey et al., 2015; Barca et al., 2012; Hildreth and Bailey, 2013; Kline and Moretti, 2013; Neumark and Simpson, 2015). However, as far as we know, the extent

to which a true process of participation of local forces takes place in the process of production, and in the definition of objectives of local industrial growth, needs to be further investigated. A bottom-up relation in the context of STs is mainly limited to policy actors and government institutions, and while some degree of participation may be observed for firms and universities, for example, a large portion of the population contributing to the economic environment of these townships (primarily, the workers) seems to be excluded.

Apart from the references to international literature, international scholars approaching the Chinese industrialization experience should be aware that a large part of the debate on these topics takes place among Chinese scholars and policy-makers and is largely unintelligible to external analysts. We refer to a number of Chinese-written books, scientific journals and policy documents that are the backbone of the elaboration of “capitalism with Chinese characteristics.” These contributions are difficult to explore by an international audience not only because of the language, but also because they refer to a literature corpus that is rooted in the history of the national debate and has elaborated its own concepts and tools (GDASS, 2017; Di Tommaso et al., 2013a; Nolan, 2012).

STs have experienced a constant and remarkable growth in terms of industrial development and GDP, but in many cases they have brought about problems in terms of social, economic and environmental sustainability. In this framework, the future research efforts studying this kind of agglomeration should concentrate on connecting this reality with two streams of the literature that have so far been largely neglected. The first is related to the contributions on human development: many of these agglomerations have been surprisingly effective in promoting the economic growth of localities, but still little is known about their (potential) capacity to encourage the human and social development of the communities living in the same localities. In this regard, we believe it is a priority to build a bridge between the contributions about human development (Anand and Sen, 2000; Démurger et al., 2002; Gillis et al., 1992; Sen, 2005) and those regarding industrialization processes, and in particular the particular industrial policy measures implemented by the Chinese government in the Guangdong province. Much has still to be done in this regard, although some first contributions have started to emerge with respect to specific case studies (Barbieri et al., forthcoming-a; Biggeri, 2017) and categories of populations (Chan and Pun, 2010).

Lastly, a stream of literature that should be taken into account while studying the STs phenomenon is that of political economy studies (Cohen, 2017; Frieden and Martin, 2003; Gilpin, 2011, 2016). This would allow a better understanding of the dynamics of consensus creation, political

stability and relations between groups and interests. Furthermore, these types of clusters play a core role in global production dynamics and global consumption networks and therefore require careful analysis of their impact on international equilibria between actors and interests.

THE EXPERIENCE OF SOUTHERN CHINA'S SPECIALIZED TOWNS

The impressive industrial and economic growth of the Guangdong province has been centered on the prefectures of the Pearl River Delta (PRD) and, to a lesser extent, of the coastal areas. The PRD area, in fact, had several advantages that made it one of the favored areas for the first policy experimentations related to spatial concentration of production: two out of the three first national Special Economic Zones (SEZs) were located there (Zheng et al., 2016). First, the Pear River has always been a traditional commercial and communication route; second, the PRD is located right next to Hong Kong and Macao, which represented the first channels of entry of foreign capital and trade in the country. This has made the PRD area the most suitable part of mainland China for the attraction of FDI (Barbieri et al., forthcoming-b). Because of its strategic position, the PRD was the pilot area in which the first opening policies were implemented. It is also the area in which the “one city, one product” policy, aimed at supporting the agglomeration of specialized firms in some specific localities, and more in general to promote industrial development, competitiveness, innovation and technological upgrading, was launched. The rapid growth of the PRD has induced policy-makers to slightly adjust their intervention, implementing measures to shape the “geography” of its industry, trying to: (1) rationalize the dramatically fast – and often chaotic – development of the PRD area; and (2) encourage the development of the other lagging areas (Barbieri et al., 2012; Sarcina et al., 2014; Di Tommaso et al., 2013b).

The Main Features of the STs Program

The STs program consists in an *ex post* recognition of some particular features of the towns that apply to the program. Each potential ST is studied by a group of government experts that eventually awards the town with the label of “Specialized Town.” Such recognition is given according to some specific criteria (Di Tommaso et al., 2013a): (1) the town has to be a “township” from an administrative point of view or, less frequently, a “county” or an “urban district”; (2) at least 30% of its industrial output (or employment)

has to be concentrated in one industry (defined in specific sectoral terms to the three-digit level equivalent of international classification systems), that is called a “specialized sector”; (3) the annual value of the industrial output has to exceed 2 billion yuan (equal to about US\$293 million).

Once the certification is obtained, the certified STs are entitled to receive a subsidy of 30 000 RMB from the Department of Science and Technology of Guangdong Government (DSTGG), provided that an additional amount is financed by the local government in the proportion of 1 (province): 10 (city): 50 (town) (Wang, 2009; Wang and Yue, 2010). This fund has to be mainly used to establish the so-called Technology Innovation Platform, the aim of which is to help firms in the development of new technologies, in the upgrading of their production, and in favoring the establishment and consolidation of relationships among actors. The activity of the innovation centers is not only directed to the single firm, but aims to favor an improvement in the reputation of the whole productive system of the town, possibly supporting the development of a common and easily recognizable brand (Arvanitis and Qiu, 2004; DSTGG, 2003, 2006a; Wang, 2004).

These 416 townships belong to very different categories, in terms of size, degree of urbanization, period when they developed, and so on. For some of them, industrialization flourished thanks to local small and medium-sized enterprises (SMEs), and while in some cases this process can be connected to a district-like development, in others it is the result of the fast growth of private actors with no linkages among them. In other cases, industrial growth was led by a top-down process originated either by the privatization of the so-called Townships and Villages Enterprises (TVEs) or by the action of big state-owned enterprises (SOEs) or private companies that polarized the industrial growth in the area. Yet other industrial clusters were born due to their geographical localization near traditional trade routes or logistic areas. Finally, in other cases, such as Dongguan, the impressive industrial development was mainly triggered by the attraction of high-tech foreign-funded investors, often causing a chaotic growth of the town (Barbieri et al., 2009; Bellandi and Di Tommaso, 2005; Di Tommaso and Bazzucchi, 2013).

Features and Role of the Technological Innovation Platforms

The technological innovation platforms are at the center of the STs initiative. First, they are designed to help firms with services for the development of new technologies and the upgrading of production. Second, they aim at encouraging cooperation among the different economic and institutional actors of the town, building a link between private firms and

public research institutions to foster innovative projects (Barbieri et al., 2010; GDASS, 2017; DSTGG, 2017). We identify three main categories of innovation platforms (Barbieri et al., 2010; DSTGG, 2008a): (1) information networks, used to disseminate technology, exchange and diffuse commercial information and carry out Internet based cooperation among actors; (2) innovation centers, directly created or supported using funding provided by the local and the provincial government; and (3) research and development (R&D) centers within leading firms.

Interviews with policy actors revealed that the DTSGG has tried in recent years to create a competitive market for innovation centers, where several service centers are created and encouraged to compete for the supply of services to the companies in the town, in order to increase efficiency. Innovation centers operate in their everyday activities and strategic choices mostly by following a market logic, but at the same time they maintain linkages with the political funding actors mainly through the board of directors, which is in charge of defining the strategic priorities and areas of intervention.

The activity of innovation platforms contributes substantially to innovation in Guangdong (Table 5.1): in 2015, for instance, they completed 620 projects and produced more than 3 million yuan of output across the whole province. More generally, the innovative effort produced in the STs is evident not only in the activity of the innovation platforms, but also in the number of innovation and research providers, although these figures vary in the different cities of the province.

The Phases of the STs Program Implementation

We can identify at least four phases in the STs policy evolution. The first can be traced back to the 1990s. Indeed, although the concept of “Specialized Town” was a new one in 2000, it stemmed from a previous government intervention for the promotion of economic development in rural areas. It was in fact based on the experience of the Spark Plan, a national program promoting technological innovation in rural areas with a double aim: on the one hand, upgrading agriculture production and, on the other, promoting a gradual structural shift towards manufacturing (Barbieri et al., 2009; DSTGG, 2006b; Zhang and Ling, 2003). The underlying idea was that strengthening the innovative capacity of the agricultural sector would have positive spillover effects on the whole economy, therefore favoring a parallel growth of industrial productions (Di Tommaso et al., 2013a).

The measures of the Spark Plan also included the creation of several investment areas, the so-called Spark Technology Investment Zones,

Table 5.1 Data on innovation of STs by city, 2015

City	Investment in science and technology (10000 RMB)	Of which public (%)	Engineering centers	No. firms with R&D centers	No. innovation service providers	No. public research centers	No. projects by innovation platforms	Output value of innovation platforms (10000 RMB)
Chaozhou	97239	11.00	19	43	239	13	6	6279
Dongguan	1222027	11.93	110	1432	521	168	24	18556
Foshan	1335283	6.54	234	832	351	110	301	102265
Guangzhou	17828	14.10	5	24	42	16	8	n/a
Heyuan	4445	53.21	n/a	0	172	9	8	998
Huizhou	98726	2.40	5	67	43	15	n/a	n/a
Jiangmen	228226	5.92	48	82	80	26	75	17334
Jieyang	36382	11.71	10	27	57	24	7	7723
Maoming	10372	24.56	2	2	67	33	13	14766
Meizhou	40320	25.78	11	13	328	68	25	13954
Qingyuan	10476	5.09	n/a	7	10	6	n/a	n/a
Shantou	62073	20.05	21	100	176	64	13	13408
Shanwei	3105	39.45	n/a	10	105	9	6	612
Shaoguan	7441	19.42	n/a	13	55	14	6	3826
Yangjiang	27348	32.62	8	39	71	12	4	4100
Yunfu	13620	32.62	8	13	60	16	10	7239
Zhangjiang	33870	14.14	5	20	196	46	11	15096
Zhaoqing	21955	19.34	7	36	109	27	18	23336
Zhongshan	639190	16.33	94	446	182	70	78	43066
Zhuhai	45157	45.20	13	38	36	23	7	8100
Total	3955083	11.00	600	3244	2900	769	620	300658

Source: Su and Sun (2016).

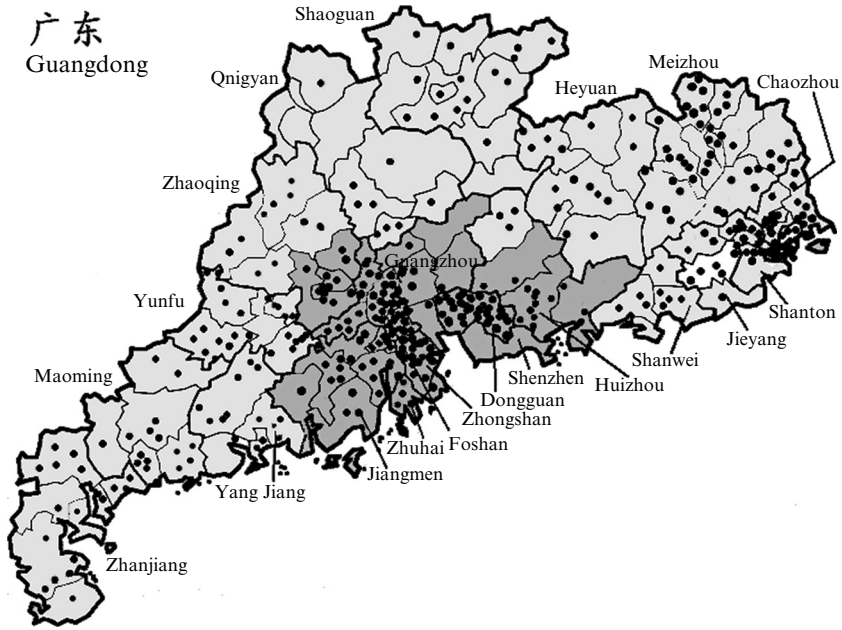
where firms could benefit from the availability of funds from government subsidies and bank loans (Barbieri et al., 2010). While studying these investment areas, some experts of the DSTGG realized that in most cases each area tended to specialize in a specific sector, what has been called “one city, one product” (Wang and Yue, 2010; Su and Sun, 2016), that formed the basis of the ST program.

A second phase of the pilot development of the program took place in the period 2000 to 2003, specifically through two formal policy documents named the “Plan for the ST Technological Innovation: Pilot Test” and “Managerial Methods for the ST Technological Innovation: Pilot Test” (DSTGG, 2008b). Most of the STs recognized in this phase were located in the core area of the PRD, while a smaller number were in the eastern part, where the SEZ of Shantou was also established. These cases, coupled with the recognition of some analogous international industrial agglomeration cases considered to be successful all over the world (such as industrial districts, firm clusters, local systems of innovation, and so on), have been the basis for a new strategy in which Guangdong policy-makers started to design measures to actively support these types of industrial agglomerations (Di Tommaso et al., 2013a). The guiding principles of this period can be summarized as promoting industrial growth and upgrading, while at the same time rationalizing the industrial distribution after the first accelerated industrialization wave in the province (Barbieri et al., 2009; Di Tommaso et al., 2013a).

A third phase of the program implementation can be identified from 2003 to 2008. After the establishment of the first specialized towns, the program extended to some other cities in the province such as Meizhou, Foshan, Shantou and Jiangmen. The recognition of specialized towns was then viewed by policy-makers as a tool to upgrade production and at the same time to promote marginal areas of the province. This double path of policy implementation clearly appeared in the documents issued, such as “Thoughts and Strategies for the Development of Clusters in Guangdong and for Brands Creation” (2005), the “Coordinated Promotion Plan between Province and (Prefecture) City” (2005) and the “Guangdong Province Government’s Suggestion on the Promotion of the Development of Specialized Towns” (2006), that recognize the strategic value that STs had in the overall development of Guangdong (Barbieri et al., 2010; Di Tommaso et al., 2013a; Lin, 2006; Su and Sun, 2016). These documents have several features in common. First, provincial and local institutions start to work together to regulate the clustering processes to avoid sectoral overlapping and to orientate the territory towards the construction of a coordinated and integrated regional innovation system; unsurprisingly, the Guangdong Provincial Specialized Towns Development Promotion

Association (POTIC) was established in these years (Su and Sun, 2016). Second, many of these documents mainly point to the diffusion of good practices, such as a better use of knowledge, of patenting and intellectual property rights (IPR) practices, and the diffusion of territorial branding strategies. Third, emphasis is given to collaboration between universities and research institutions and the local innovative public and private environment, as well as to the establishment of “demonstration towns” where all such processes are put in place with positive results.

After 2008, a fourth phase started and can be considered to be still ongoing. Both the official documents and the sectoral and geographical transition of the ST policy from 2008 on seems to be in line with the whole change of Chinese policy towards endogenous growth and innovation. The most important policy line in the framework of the ST program is the “One Town, One Policy” issued in 2010 (DSTC, 2011a, 2011b). With this measure, provincial policy-makers aimed at incentivizing each town to find and implement its own development path, while simultaneously supporting the overall economic development of the Guangdong province. This implies the following actions: (1) to simplify the political administration of STs by further decentralizing the town’s economic management to local authorities; (2) to optimize and strengthen the industrial structure of STs and to manage urban development; (3) to restore public accounts to good order so as to have the resources for the renewal of old infrastructures and the construction of new ones; (4) to promote quality enhancement, especially in traditional industries; and (5) to help STs increase their share of GDP, their innovation potential and, more generally, their competitive capacity (Tsai, 2013). On the same lines, the “One Institute, One Town” initiative of 2012 aimed at creating a university or technical tertiary education institution in each town (Su and Sun, 2016). Finally, two more elements of empowerment of local sources can be found in the initiatives and plans produced by the DSTGG and Guangdong governments in this period. On the one hand, there is a great emphasis on the promotion of micro, small and medium-sized enterprises and on building public innovation services to suit their specific needs; on the other hand, a few official governments and initiatives are focused on enhancing the quality and the innovative performances of those towns specialized in production with strong local features, traditional sectors and those that are in more remote areas (Di Tommaso et al., 2013a; DSTGG, 2017; Su and Sun, 2016). Figure 5.1 illustrates the location of Guangdong’s specialized towns up to the end of 2015, following the four phases described above.



Note: * The 17 new towns recognized from 2015 to 2018 are not included in the map due to unavailability of data.

Source: Authors' elaborations on data from Guangdong Provincial ST Development Promotion Association.

Figure 5.1 STs in Guangdong

THE EVOLUTION AND RECENT TRENDS IN LOCALIZATION, SECTORAL DISTRIBUTION AND LOCAL BASED ACTIVITIES

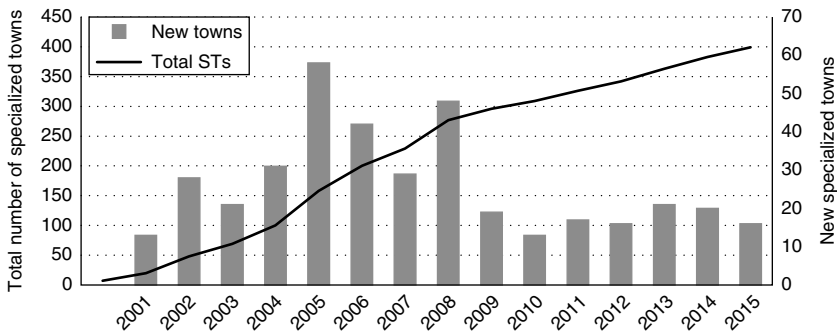
This section is based on the result of fieldwork and data collection at the ST level in Guangdong. The continuous evolution of the phenomenon of STs, along with the heterogeneity of available data, has induced us to continuously compare and verify information, using several official sources when possible. In particular, data were initially directly gathered from the official statistics provided by representatives of the DSTGG. These data were useful in sketching a general framework and in identifying some required context variables (such as temporary and permanent population, output, GDP, and so on). We then integrated the information with more specific sources. First, we consulted several other official

documents, publications and websites. Other relevant data sources were the Research Development Center of Guangdong Province, POTIC and the South China University of Technology. Additionally, we collected data and information from local governmental bodies. When possible, we also relied on field case studies and interviews with relevant stakeholders (mayors, town chiefs, party representatives, entrepreneurs, policy-makers in charge of the innovation centers, and so on). Finally, we promoted an extensive phase of cross-checks, in order to minimize the risk of mistakes, inconsistencies and non-reliable information. At present, our dataset covers the 399 STs officially recognized at the end of 2015.²

General Trend

At the end of 2015, more than 25% of Guangdong township-level entities were recognized as specialized towns. The number of STs has grown year by year since the beginning of the program in 2000. While in the first period (2000–2003) the launching of the program concerned a relatively small number of towns (69 at the end of 2003), a strong boom occurred over the period 2004–2008: in five years, the total number grew to 277, with two peaks of new recognized STs in 2005 (58) and 2008 (48). After 2008, the number of new STs – for obvious reasons – decreased at the pace of 15–20 a year (Figure 5.2).

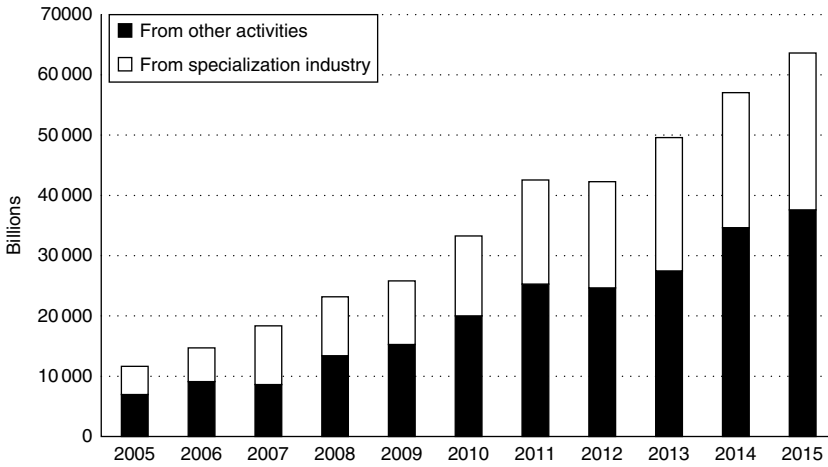
In 2015 this group of towns represented 40% of total GDP in Guangdong



Sources: Based on POTIC data.

Figure 5.2 Temporal evolution of STs

² From fieldwork talks with DSTGG officials, we know that as of July 2017 the officially recognized STs stand at 413. However, at that date there was no official available source and statistics about the 14 new towns.



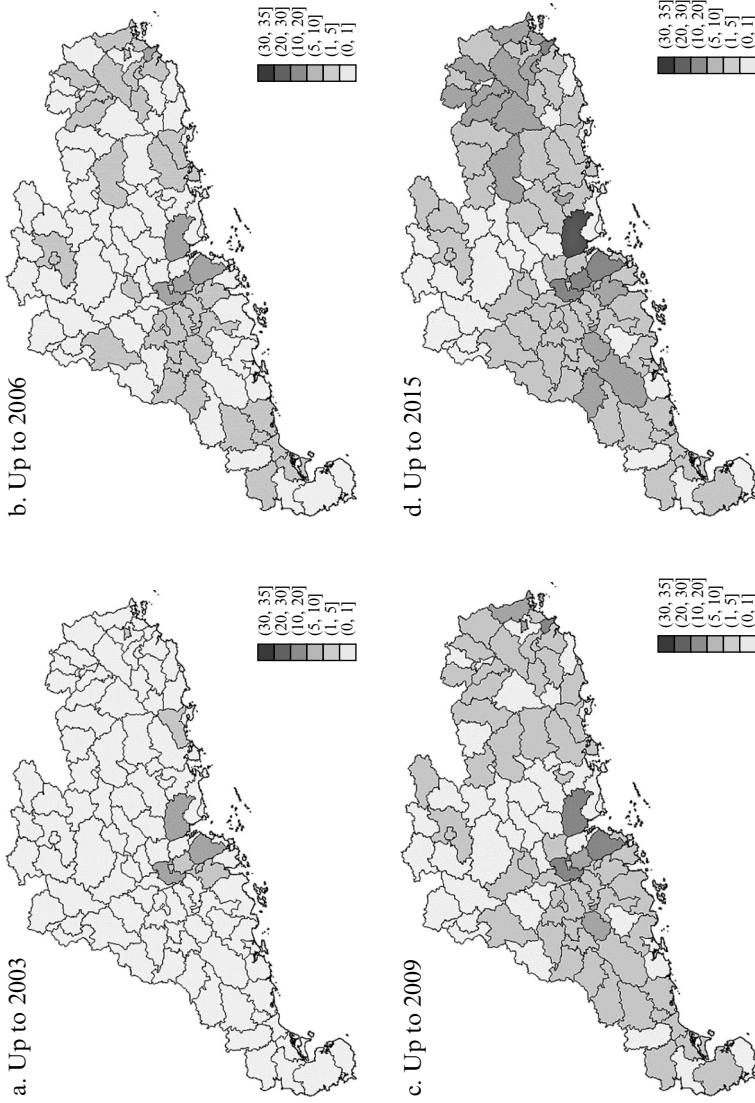
Source: Based on Guangdong Academy of Social Sciences data.

Figure 5.3 Output of specialized towns (yuan)

(NBS, 2015). Their gross domestic output grew steadily over a decade, with a small reduction only between 2011 and 2012. Between 2005 and 2015 the output coming from specialized industries was on average above the required threshold of 30% and was stable at around 40% of total output (Figure 5.3).

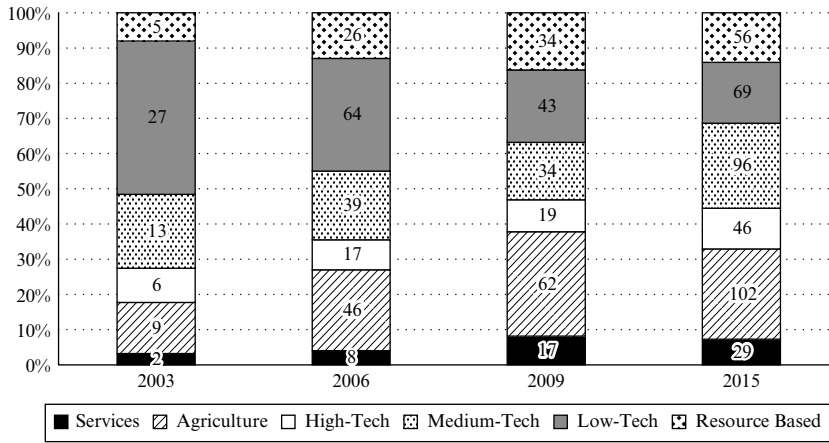
Geographical and Sectoral Trends

The growth in the number of STs has not been evenly distributed across the areas of Guangdong (Figure 5.4). The launching phase started in the PRD’s towns and, to a lesser extent, in other areas of the coast (Figure 5.4a). In the boom period, a far larger number of counties hosted new STs: in the first years (up to 2006), the program extended mainly to the so-called intermediate area, that is, the prefecture of the “Great” PRD and other counties in the coast (Figure 5.4b). From 2006 to 2009, we see instead a surge of STs in more peripheral areas, with rural bases and mainly mountainous territory (Figure 5.4c). Finally, the most up-to-date picture shows a very small number of counties without STs. Specialized towns continue to be mainly concentrated in some counties and prefectures of the PRD (particularly in Dongguan, which is a one-county prefecture). However, a large portion of them are now also localized in the north-eastern prefectures of Meizhou and Chaozhou (Figure 5.4d).



Source: Based on POTIC data.

Figure 5.4 Geographical distribution of STs

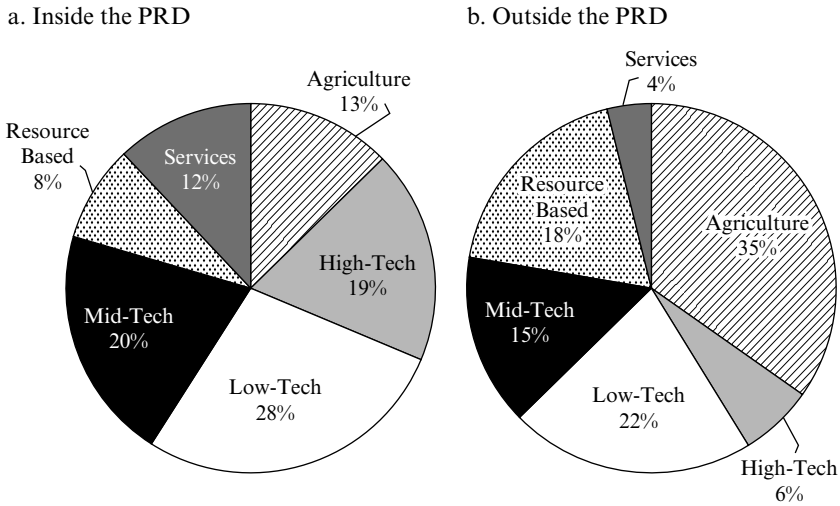


Sources: Based on various sources.

Figure 5.5 Sectoral distribution of STs

The sectoral distribution of the specialization of the towns has changed over time and reflects the shift in the aims of the STs policy (Figure 5.5). The first group of specialized towns in 2003 was predominantly specialized in low-tech production, which at that time characterized the core of Guangdong manufacturing system, particularly in the PRD. It is clear, then, that in the first period of development this tool was used to rationalize the geography of the already existing production. Gradually, however, the weight of low-tech specialized towns diminished in favor of agriculture, resource based activities and services up to 2009, and then high-tech and medium-tech in the aftermath of the global financial crisis. This double trend is due to the new aims of the policy after the experimentation period: (1) the specialization of resource based and agricultural towns, which follows the necessity to upgrade traditional productions and promote such upgrading in areas that were less involved in the development of manufacturing in the region; and (2) the promotion of technological upgrading and the growth of innovative activities in those areas that represent core clusters of Guangdong’s manufacturing.

The promotion of agriculture-related activities and of medium- and high-tech sectors has been carried out differently in different areas. A clear division of labour of specialized towns exists between those located in the PRD prefectures and those outside (Figure 5.6). The STs in the PRD area (Figure 5.6a) are predominantly focused on manufacturing, with the



Sources: Based on various sources.

Figure 5.6 Sectoral distribution of STs according to PRD and non-PRD areas, 2015

sum of mid- and high-tech STs exceeding the number of low-tech ones. Agriculture, services and resource based activities play a marginal role, with the service STs group specialized in activities in many cases strictly connected to the manufacturing sector (such as logistics). A completely different situation is found outside the PRD (Figure 5.6b), where it is clear that the policy has been used with the aim of promoting specialization activities relatively less connected with manufacturing. Indeed, this group of STs is far more concentrated on more traditional productions related to the agriculture and resource based sector, and even in the manufacturing group the number of low-tech STs exceeds the sum of mid- and high-tech ones.

“Local Source” Based Townships

Finally, the analysis of the trajectory of the policy has allowed us to acknowledge that the initiative has gradually shifted towards the need to follow the path of endogenous growth and endogenous sources. Based on their history of economic development, the literature identifies two main categories of specialized towns (Bellandi and Di Tommaso, 2005; Wang, 2009; Wang and Yue, 2010):

- exogenous clusters, whose growth and economic development has mainly been triggered by the attraction of FDI and where the policy has been mainly aimed at favoring the relationships between foreign firms and existing enterprises;
- endogenous clusters, whose birth is mainly due to local factors; for example, some of them result from the evolution of ancient productive systems, while others have been pushed by the privatization of town TVEs.

In accordance with this classification, looking into the history and the features of each township, we find that some of them have followed an economic and industrial development that is rooted in their economic and cultural history (which we will call “local source” based); on the other hand, there is another group of towns that has undergone a process of growth triggered by external forces, such as foreign capitals but also exogenous political actors (“non-local source” based).

Following this line, we analyzed the context of each township to distinguish between these two groups and to observe whether a change in the policy towards one group or the other has happened. We worked through a content analysis on the various local and regional sources and isolated the group of “local source” townships. The criteria that we used to identify them recall Becattini’s contribution on industrial districts as originated by the historical profile of the production atmosphere of the hosting areas (Becattini, 2015). Based on this, we included each township in the “local source” group if its specialized production has at least one of these features:

- it is rooted in the history of the town;
- it is based on local resources (for example, aquaculture in townships next to water);
- it is a traditional or typical production of the region, or mainly oriented towards national markets (such as for example rice cookers or pottery);
- it is a non-typical production derived from production rooted in the history of the town (such as machinery for stone processing in areas previously used as quarries);
- it is strictly linked to physical characteristics of the territory (such as port logistics in coastal areas).

It is true that some specific productions, such as information and communication technology (ICT), are *per se* to be considered exogenous as they have been introduced in these townships as a product of the process of opening and internationalization. In addition, some activities that are

Table 5.2 Sectoral distribution of “local source” and “non-local source” based STs

	Sectors					
	Agriculture	High-tech	Low-tech	Mid-tech	Resource based	Services
“Local source” based townships	102	3	37	8	41	18
“Non-local source” based townships	0	43	32	88	15	11

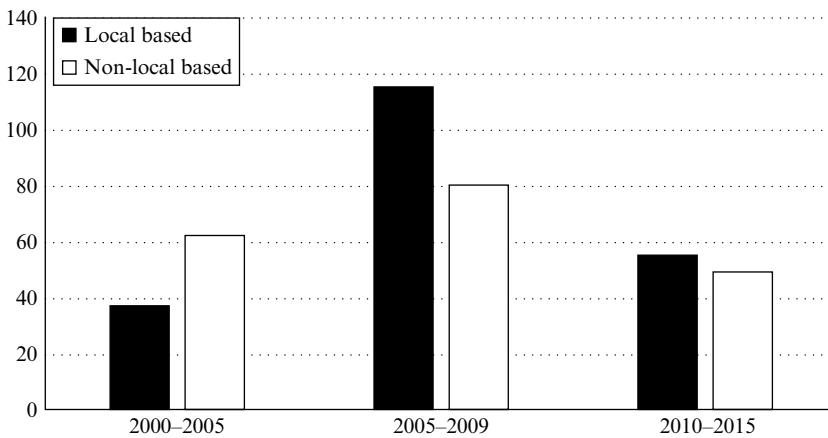


Figure 5.7 Distribution of STs according to their local or non-local origin, 2000–2015

by their nature oriented to serve local or national markets (such as in the agriculture sector to a large extent) tend to be naturally collocated in the group of “local source” based activities. Nonetheless, the distinction between these two groups is only partially overlapping with a sectoral distribution of township: within the manufacturing sector (independently of the level of technology) and in services both types of specialization coexist (Table 5.2).

The group of local based STs corresponds to more than half of the total (209 out of 399 towns). What emerges from the analysis of the time trend is that the relative weight of local based towns has grown from the mid-2000s on, and specifically in correspondence with the shift of policy orientation towards endogenous sources and growth (Figure 5.7).

Regarding the geographical distribution of local based versus non-local based townships (Figure 5.8), we can confirm that there is a qualitative difference between the path of specialization in the PRD and non-PRD areas. Local based townships are mainly concentrated in the inner and mountainous areas of the non-PRD, which require a larger public investment and a focus on their role for the local markets and on the existing sources of production. However, the predominance of non-local specialization among the PRD prefecture is a clear sign of the exogenous nature of their economic growth path, which has largely been based on foreign capital and migrations.

ACHIEVEMENTS AND LIMITS OF THE SPECIALIZED TOWNS BASED GROWTH: A TALE OF THREE CITIES

The ST initiative has been a core instrument for the industrial development of the whole province. Nowadays, specialized towns are spread all over Guangdong and substantially contribute to its economic performance. Indeed, the ST program has been, and still is, particularly relevant to some cities of the province located in the PRD. This is the case of three cities, Dongguan, Foshan and Zhongshan, which in many regards represent core territories of industrial production, both in general and in relation to specific manufacturing products. In these three prefectures, the whole industrial production has been organized around the STs system: nowadays, specialized towns represent 75% (Zhongshan) to more than 90% (Dongguan and Foshan) of their total townships and subdistricts. Some townships are specialized in more than one, often interlinked, product or sector (Dongguan and Foshan). Therefore, the economic performance and evolution of these three townships is representative of the achievements that the program generated.³

According to the latest data (from 2016),⁴ these three cities are among the best-performing ones in terms of GDP in the whole region, ranking second (Foshan), third (Dongguan) and fifth (Zhongshan). Since the beginning of the program (in 2000), their GDP growth has been some points higher than both the provincial average and the PRD average. These three territories represent the core of the provincial industrial

³ We exclude Shenzhen in the following calculations and comparison, given its status of Special Economic Zone and its substantially independent economic trajectory with respect to the rest of the province.

⁴ If not specified otherwise, all the data in this section are taken from NBS (2017, 2006, 2005, 2001).

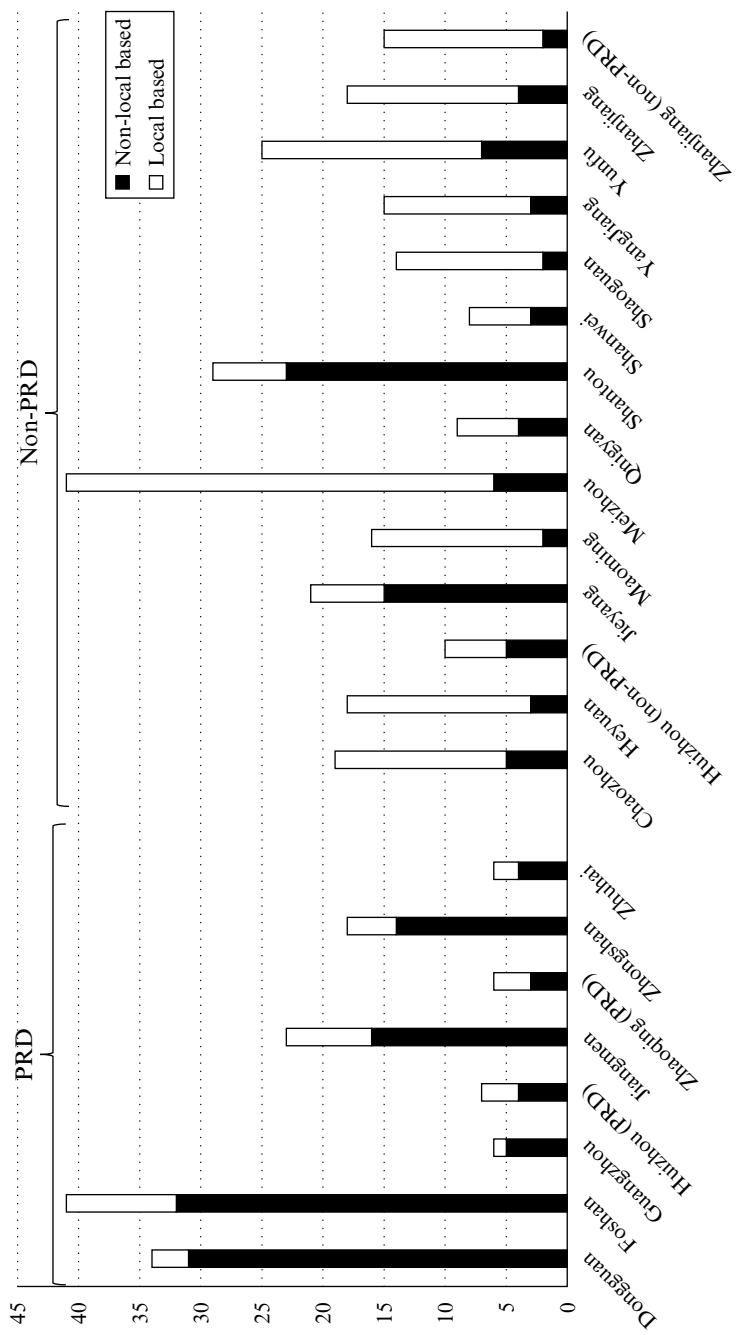


Figure 5.8 Geographical distribution of local based and non-local based STs, 2015

production, accounting for 35% of Guangdong industrial GDP, and are indeed industrial based areas, since 40–55% of their total value-added comes from the industrial sector. Equally impressive is their performance on foreign markets: Dongguan is the first exporter in the whole province, while Foshan and Zhongshan rank third and sixth, respectively. Together they represent 30% of the provincial export value. While the export propensity of Dongguan was clear even before the take-off of the STs program, the export growth rate of Foshan and Zhongshan became higher than the provincial average over the period 2000–2016.

One of the core areas of intervention of the ST program is innovation and, more in general, the upgrading of the industrial system. The three ST based cities also perform very well from this point of view. In terms of inputs, Dongguan, Foshan and Zhongshan are the areas, after the capital city, where private firms invest the most and employ the largest amount of people in R&D. This might indicate that the ST program was successful in stimulating private initiatives in the fields of innovation and upgrading. The situation is more blurred in terms of public R&D investments (very high in Dongguan, moderate in Foshan and low in Zhongshan), suggesting that the composition of the innovation activities in the three cities is heterogeneous and that the public–private mix may vary greatly according to the local features of the industrial environment. The output of this innovation process, which we proxy with the new products sold in 2016, seems to be very high: the three cities together account for almost half of the total value, and more than half of the exports of the whole province. Their growth in this area from 2003 is particularly impressive compared to the other cities: approximately 20 percentage points more than the provincial average.

There is little doubt that as far as the industrial, export and innovation levels are concerned, the performance and growth of these three STs based cities have been impressive and above the already high provincial average. However, there are also some social, environmental and quality-of-life related costs of the ST experience that need to be taken into account when evaluating the social desirability of this model.

First, the economic performance of the cities is not equally mirrored in the remuneration that goes to workers: average wages in Foshan and Zhongshan are still relatively high compared to the average of the region – ranking fourth and sixth – but the situation is far worse in Dongguan, which is twelfth out of 21 cities. Additionally, the growth rates of nominal wages from 2000 to 2016 are among the lowest in the whole province. Moreover, the high economic performance only partially corresponds to improvements in workers' conditions. Taking the average death rate on duty by 100 million RMB of output, while Foshan has one of the lowest

figures and was able to substantially reduce it in the period 2000–2016, Zhongshan and Dongguan perform worse than the provincial average, regarding both 2016 levels and the trend over the whole period. Poor workers' conditions are also reflected in the social unrest existing in these areas: according to the China Labour Bulletin, 40% of the strikes and workers' protests in the province over the period 2011–2016 were concentrated in Dongguan (235 cases), Foshan (75) and Zhongshan (33).⁵

Second, the results in terms of education are poor relative to the strong economic performance of the area, with very heterogeneous results for the three cities. Against a provincial average of 0.9 graduates and 1.2 new enrollments in regular secondary school in 2016, Zhongshan performs far better (1.8 graduates and 2.5 enrolled), Dongguan is around the average (1 and 1.3), while Foshan is largely below it as far as the number of graduates is concerned (0.6 and 1.8). Data on the number of teachers per student show analogous results. However, the three cities have undergone a similar positive change in terms of growth of secondary education: while from 2000 to 2016 the overall provincial average of both newly enrolled and new graduates every 100 persons diminished by 96%, all the figures related to the three cities grew, although at different rates.

Lastly, Foshan, Dongguan and Zhongshan are among the most polluted cities of Guangdong: they are responsible for 30% of the provincial amount of industrial wastewater and 23% of industrial gas emissions. We do not have data to assess whether processes of pollution reduction and environment-friendly initiatives are being implemented in these cities. What we can do is to highlight the difference among the three cities in terms of attitude towards the environment, by using as a broad indicator the per capita park area. While in 2016 at the provincial level each citizen has 17.9 square metres of green areas, in Dongguan this figure peaks at 23 (first city in the province), in Zhongshan it is 18.4, while Foshan is far below the provincial average with 13.9. Overall, while the ST program has undoubtedly produced positive results on economic and innovation performance, it also hides huge social and environmental downsides that negatively affect the life of those living and working in these areas.

FINAL REMARKS

The ST program has had a core role in the economic development path of Guangdong and has recently inspired other national programs. There is

⁵ Data are available at <http://www.clb.org.hk/>.

little doubt that the initiatives related to STs were successful in promoting upgrading and economic growth across Guangdong and were also able to reach more remote areas in order to encourage the rationalization of industrial agglomeration and the regional balancing.

However, there is growing concern among local scholars and policy-makers about the long-run sustainability of this model of economic development. Although there are some examples of townships that were able to combine economic growth and societal well-being and were taken as examples of new, more sustainable development by national governments – such as Beijiao, which pioneered the national initiative of the “characteristic towns” (Luo, 2016) – this chapter has shown that the territories that based their development on the ST model are underperforming in terms of quality of life, exploitation of the environment, services for daily life, education and workers’ conditions. Moreover, some studies have highlighted that such townships host large numbers of migrant workers who live and work in very poor conditions and cannot access public services, such as health or education for their children (Song, 2014).

There is still a long way to go for Chinese policy-makers to improve the living conditions of these places of production. However, the responsibility of these issues should not be attributed only to the local or national context: while analysing experiences of this kind one should always keep in mind that these places play a key role in the global consumption and production equilibria: not only because these localities are world manufacturing hubs for some specific products,⁶ but also because widespread production and consumption habits in the world would not be possible without these Chinese localities. For these reasons, while there is no doubt that local governments need to tackle these sustainability issues directly, no change is plausibly possible if the international community is not able to rethink its consumption model and its worldwide consequences.

Future research should therefore be devoted to explore the connections between the successful industrial policy model of specialized towns and a series of issues that are still wide open, such as the difficulties of these systems to generate indigenous innovation; the increasing competition coming from other localities of the Global South of the world, increasing the trend of multinationals to relocate in places able to guarantee lower production costs; the fragility of this export-oriented model, which has been dramatically highlighted by the 2008 Great Recession; and, last but not least, the need for an improvement in the working conditions and in

⁶ For example: the ST of Shilling supplies 70% of the production of bags and suitcases for the European Union and United States markets, while the ST of Tangxia accounts for 40% of the global production of golf products (Jankowiak, 2017).

the quality of life of these “company-towns,” which have become global production hubs at the expense of social conditions, to such an extent that they might be the place of the future explosion of the Chinese “social bomb.”

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