Dynamics of Export-oriented Industrial Districts in China

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China’s industrial district

Outline

- Concept
- Distribution
- Characteristics
- Conclusion
About myself

Innovation Spaces (2001)

New Industrial Spaces (1990)

Beyond Cluster: Theoretical Perspectives on the Chinese Industrial Clusters (2010)
Background

- To explain China’s incredible growth and global advantages in the past three decades,
  - one of important reason is pervasive and amazing clustering of manufacture companies with both cheap workers and an incomplete regulation of industrial waste.
  - The fine geographical division of labor in or between industrial districts exist at different technology levels with different creativities.
- This could not be explained by the industrial district/cluster studies in the West.
- In China, industrial districts/clusters do not automatically lead to innovation; in contrast, they would act well as only supply-chain cities for multinationals, where the knowledge hide in the fixed products.
- To define the circumstances in which local upgrading strategies to succeed or fail is necessary.
Top-down and bottom-up agglomerations in China

Along the pathway to China’s export-oriented industrialization there are two types of agglomerations:

- “induced”
  - created by top-down intervention
  - urbanization-based industrial parks / preferential tariff zones created by government

- “natural”
  - formed from the bottom
  - localization-based districts/clusters created by market mechanism
Employment distribution

ICT industry

garment and footwear industry

machinery and electric equipment

leather industry

(By He Canfei)
产业园区内形成了产业集群或自发的产业集群区域
建了的产业园区

**Industrial agglomeration**

- Preferential tariff zone / park
- Industrial district/cluster
  - Industrial district
  - Supplier Park of FDI
  - Industrial complex
There are so many Preferential tariff zones of China! (They are excluded in this study)
Industrial agglomeration

- the association of productive activities in close proximity to one another, as in a major specialized industrial region or in a larger town or city.
- typically gives rise to external economies associated with the collective use of the infrastructure of transportation, communication facilities or other services.
- Co-location requirements differ across industries and product markets; they also differ across firms and occur at different places.

Cluster concept: three features
Concept of industrial cluster

- Old explanation: “Geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries, and associated institutions (e.g. universities, standards agencies, trade associations) in a particular field that compete but also cooperate” (Porter, 2000)

New understanding: Industrial cluster, which formed in global-local tension, is local ecosystems which address joint action and collective efficiency to improve innovation and global competence.

Not all clusters are innovative, unless the actors (firms, governments, associates, etc.) within clusters cooperate and persist in deliberate learning to innovate (Wang, 2006).

A big difference between clusters in developed and developing countries appears to be the kind of market niches (value activities) they focus on.
**Industrial district:**
a theoretical concept in regional studies

- Marshall (1890) applied the concepts of externalities and industrial district to explain the phenomena of clusters of SMEs in England.

- “Industrial district” was employed to describe the thriving local development witnessed in the Third Italy in the 1980s (Becattini 1990).

- Industrial districts are local production systems with an active co-presence of people and of a primary industry consisting of small and independent firms specializing in the different phases of a single production process (Sforzi, 1999).
Concept definition in this workshop

- Markusen (1996) rejected the dominance of the Marshallian industrial districts in regional development. She identified three additional types of industrial districts:
  - the hub-and-spoke industrial district;
  - the satellite platform; and
  - the state-anchored district.

- **The industrial districts in China in this workshop refer to the Marshallian industrial districts or the Italian model of industrial district.**

- **However, Chinese industrial districts based on low costs are in the lower road.**
Cluster formation in developing countries: concentrated dispersion

Global dispersion

Actors: MNC flagships ......

Global outsourcing

Local concentration

Clustering effect
(Positive-negative)

Local Manufacturing and service

Actors: Local SMEs, MNCs
Government, education/research institution, Industrial association
The dispersed clusters in the global production network

- The forces of dispersion and concentration result from increased contract manufacturing.
  - Despite the globally foot-loose dispersion, industrial agglomeration is promoted
    - because of the greater burden of external transaction costs which result from greater vertical disintegration.
  - These dispersed districts/clusters at difference locations can be integrated through global production network.

- Industrial districts/clusters may only be considered as facilitating factor for the subsequent developments (which may or may not occur):
  - division and specialization of labor
  - wide network of suppliers
  - agents who sell to distant national and international markets
  - specialized services
  - a pool of specialized and skilled labor
  - the formation of business association
Attributes of industrial districts

- Humphry (1995) summarized the attributes of industrial districts as follows based on the Italian model:
  - geographical proximity of related firms,
  - sectoral specialization,
  - predominance of small and medium sized firms,
  - close inter-firm collaboration,
  - inter-firm competition based on innovation,
  - a socio-cultural identity which facilitates trust,
  - active self-help organizations, and
  - a supportive regional and municipal government.

Concentrated dispersion: Agglomeration economies argument

- Despite the advantages of co-location, there has been a massive geographic dispersion of certain stages of the value chain. Why?
- Some value chain activities are more prone to geographic dispersion, while others are more sticky. Why?
  - Agglomeration economies are no longer restricted to the home country basis, giving rise to concentrated dispersion.
  - How to reproduce certain co-location/agglomeration/re-localization effects, especially promote innovation at overseas locations?
- How to create dense cross-border linkages between these clusters?
Distribution of China’s diversified industrial districts
Industrial districts in China’s in selected provinces


Sources: GDP data are collected from China Statistical Yearbook 2006; information on the number of industrial districts is from the author’s collections.
China’s industrial districts: Distribution pattern at different scales
Furniture industrial districts

Hai’an, China’s eastern capital of furniture
Foshan, Guangdong Province
China’s industrial districts: distribution in different sectors and different activities

From low-tech to high-tech
From weak creative to strong creative

Textile and apparel
Footwear
Furniture
Bicycle
Jewelry
Eyeglasses
Cigarette lighter
...

E-equipment
Auto parts
Notebook computers
...

Software
Animation
...

From manufacturing to design and R&D
<table>
<thead>
<tr>
<th>产品门类</th>
<th>专业化产业区</th>
</tr>
</thead>
<tbody>
<tr>
<td>纺织服装</td>
<td>男装：浙江宁波鄞州区、温州瑞安、山东诸城；休闲服：广东中山沙溪镇、江苏常熟海虞镇、福建晋江市英林镇、福建石狮后庄镇、浙江乐清、牛仔服：广东中山大涌镇、佛山顺德均安镇、广东开平三埠镇；童装：广东佛山禅城环市街；内衣：福建晋江深沪镇、广东南海盐步镇、汕头潮阳谷饶镇、浙江象山；毛衫：广东东莞大朗镇、汕头澄海区、浙江桐乡濮院镇、河北清河、山东阳谷、江苏吴江市横扇镇；婚纱晚礼服：广东潮州、苏州虎丘路；手袋：广东高州；袜业：浙江诸暨大唐镇；领带：浙江嵊州；西裤：福建石狮蚶江镇；纺织机械：山东胶南南王台镇；针织：广东省佛山市张槎镇、化纤织造：江苏张家港金港镇、桐乡乌镇、杭州萧山党山镇；家紡：浙江绍兴、山东即墨、昌邑、文登、江苏苏州吴江镇、浙江杭州萧山新塘镇；广东南海西樵</td>
</tr>
<tr>
<td>鞋</td>
<td>广东惠州惠东镇、鹤山沙坪镇、广州、佛山南海平洲镇、温州鹿城区、台州温岭、福建晋江陈埭镇、四川成都武侯区、崇州、安德镇、绍兴柯桥、杭州萧山区</td>
</tr>
<tr>
<td>家具</td>
<td>广东东莞大岭山和厚街、中山市三乡（古典家具）和大涌（红木家具）、佛山顺德乐从和龙江、江苏武进横林镇（办公家具）、浙江嘉善（木制家具）、湖北武汉汉阳和荆州沙市区；观音（办公家具）、河南偃师庞村镇（钢制家具）、河北香河和霸州（玻璃钢家具）、山东宁津县（实木桌椅）和浙江安吉市（转椅）、成都新都、重庆白市驿、沈阳、江西南康</td>
</tr>
<tr>
<td>玩具</td>
<td>广东汕头澄海、东莞、深圳、中山、广州、佛山、江苏扬州、南京、苏州昆山、南通、盐城、启东、宝应曹甸镇、浙江义乌、宁波、温州、云和、黄岩；上海：山东曹县、淄博、日照；福建晋江安海镇</td>
</tr>
<tr>
<td>文具</td>
<td>浙江东阳、宁波、桐庐、湖州、义乌、江西文港</td>
</tr>
<tr>
<td>乐器</td>
<td>钢管乐器：天津静海蔡庄镇、中旺镇、子牙镇；钢琴：浙江德清洛舍镇；小提琴：江苏泰兴桥镇；北京平谷东高村镇；管乐器：廊坊安次葛渔城；吉他：山东潍坊长乐乔官镇；古筝和古筝：江苏扬州；打击乐器：陕西杨陵</td>
</tr>
<tr>
<td>体育用品</td>
<td>浙江良朋镇乒乓球</td>
</tr>
<tr>
<td>雨具</td>
<td>福建晋江东石镇、浙江上虞崧镇、广东潮阳镇</td>
</tr>
<tr>
<td>渔具</td>
<td>山东烟台、淄博市高青县唐坊镇、河北固安（钓鱼浮标）和献县、福建漳州东山、浙江宁波慈溪、安徽巢湖槐林、湖南临湘市（淡水鱼浮标）</td>
</tr>
<tr>
<td>箱包</td>
<td>广州花都狮岭镇、中山三乡、河北白沟镇、安徽芜湖、福建泉州、温州苍南县钱库镇</td>
</tr>
<tr>
<td>珠宝</td>
<td>金饰：广东深圳罗湖水贝和沙头角、番禺；珍珠：浙江诸暨</td>
</tr>
<tr>
<td>眼镜</td>
<td>广东深圳横岗、东莞、福建厦门；江西鹰潭、浙江温州、台州玉环；丹阳、上海、北京</td>
</tr>
<tr>
<td>钟表</td>
<td>广东深圳盐田区、河源市和平县、山东烟台、福建漳州</td>
</tr>
<tr>
<td>自行车</td>
<td>天津、江苏太仓、深圳、河北平乡</td>
</tr>
<tr>
<td>其它</td>
<td>牙刷：扬州邗江镇、五金刀剪：广东阳江、滑板车：浙江永康；纽扣：浙江温州桥头镇；灯饰：广东中山古镇；花卉：广东顺德陈村；葡萄酒：山东蓬莱；河北昌黎；工艺品：黑龙江省尚志市（套娃）</td>
</tr>
</tbody>
</table>
So far, 164 clusters including 60% output value of the textile and apparel industry of China have been selected as upgrading support bases by the China National Textile and Apparel Council (CNTAC) in cooperation with local governments and trade organizations.
Wenzhou industrial clusters

- fastener
- pump
- sunglasses
- cigarette lighter
- lock
- shaver
- leather
- food
- garment
- low-voltage machinery
- footwear
- pen
- man-made leather
- car parts
- plastics
- print and package
Footwear cluster in Wenzhou city

Industrial park in central Shoes-polis
Industrial parks for shoes
Soles production area
Accouterment production area
Tanning industrial area
Shoes material market or Shoes market
Major shoes enterprise
## Footwear Industry in Wenzhou

<table>
<thead>
<tr>
<th>Market</th>
<th>Shoe-making Companies (2600)</th>
<th>Supporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Market</td>
<td>Firms of shoe-related chemical materials and metal hardware</td>
<td>Footwear industrial association (26 branches, 1138 members)</td>
</tr>
<tr>
<td></td>
<td>Firms of leather production (200 production line)</td>
<td>Trade firms &amp; Producer service</td>
</tr>
<tr>
<td>Domestic Market</td>
<td>Firms of shoe adorning material</td>
<td>Technology supporting institutions</td>
</tr>
<tr>
<td></td>
<td>Firms of sole production (300 with 600 production line)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Firms of last production (200)</td>
<td></td>
</tr>
<tr>
<td>Local Market</td>
<td>Firms of shoe-making Machine (200)</td>
<td>70% of the domestic industry</td>
</tr>
<tr>
<td></td>
<td>70% of the domestic industry</td>
<td></td>
</tr>
</tbody>
</table>
In the context of global shift of western musical instrument productions, several rural areas of China have been transformed into **districts/clusters of musical instrument**.
Location of the Piano factories in Luoshe town
Characteristics of China’s industrial districts
Characteristics of China’s industrial districts

① Large amount of employment are included
② Deregulation push, start-ups and spin-offs
③ Buyer-driven or contractor-driven (OEM-oriented)
④ Systems of labour division with different geographical scales
⑤ Strong involvement of government
### Firm number and employment of China’s growing manufacturing industrial districts

<table>
<thead>
<tr>
<th>Location</th>
<th>Industry sectors</th>
<th>Number of firms</th>
<th>Total Employment</th>
<th>Output (FY) (100 million RMB)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Zhejiang Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wenzhou</td>
<td>Footwear</td>
<td>4500</td>
<td>400,000</td>
<td>280 (2002)</td>
</tr>
<tr>
<td>Wenzhou</td>
<td>Lighter</td>
<td>500</td>
<td>42,100</td>
<td>20 (1999)</td>
</tr>
<tr>
<td>Yueqing</td>
<td>Low voltage apparatus</td>
<td>1000</td>
<td>86,000</td>
<td>28 (1999)</td>
</tr>
<tr>
<td>Datang</td>
<td>socks</td>
<td>8700</td>
<td>52,000</td>
<td>130 (2002)</td>
</tr>
<tr>
<td>Shengzhou</td>
<td>neckties</td>
<td>2000</td>
<td>50,000</td>
<td>80 (1999)</td>
</tr>
<tr>
<td>Haining</td>
<td>leathers</td>
<td>4000</td>
<td>60,000</td>
<td>39 (2000)</td>
</tr>
<tr>
<td>Ningbo</td>
<td>Men’s clothes</td>
<td>2000</td>
<td>300,000</td>
<td>135 (2001)</td>
</tr>
<tr>
<td>Zhili</td>
<td>Children’s clothes</td>
<td>5700</td>
<td>120,000</td>
<td>35 (2002)</td>
</tr>
<tr>
<td><strong>Guangdong Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chenghai</td>
<td>toys</td>
<td>2300</td>
<td>100,000</td>
<td>78 (2002)</td>
</tr>
<tr>
<td>Dongguan</td>
<td>toys</td>
<td>3082</td>
<td>300,000</td>
<td>140 (2002)</td>
</tr>
<tr>
<td>Humen</td>
<td>Women’s clothes</td>
<td>1200</td>
<td>350,000</td>
<td>120 (2005)</td>
</tr>
<tr>
<td>Guzhen</td>
<td>lamps and lanterns</td>
<td>1500</td>
<td>40,000</td>
<td>20 (2004)</td>
</tr>
<tr>
<td>Lecong</td>
<td>furniture</td>
<td>3500</td>
<td>70,000</td>
<td>300 (2002)</td>
</tr>
<tr>
<td>Shunde</td>
<td>Home appliance</td>
<td>8000</td>
<td>300,000</td>
<td>800 (2006)</td>
</tr>
</tbody>
</table>
## Characteristics of China’s industrial districts

1. Large amount of employment are included
2. Deregulation push, start-ups and spin-offs
3. Buyer-driven or contractor-driven (OEM-oriented)
4. Systems of labour division with different geographical scales
5. Strong involvement of local government
2. Deregulation: start-ups and spin-offs

- While some regulations of negative impacts on the economic operation of firms have been removed since 1978, large number of start-ups and spin-offs sprouted and clustered.

- But when the rigid planned system was broken down and the vitality of the economy was released, there were few laws or regulations necessary and suitable for the new market system (eg. IP law, CSR).

- It is a long way for China to go to create new regulation to fit the upgrading process of industrial districts.
## Where are the industrial districts

<table>
<thead>
<tr>
<th>Industrial districts formed in those areas</th>
<th>No industrial districts in those regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• high efficient market environment, law system is good</td>
<td>• no clearly defined and secured property rights</td>
</tr>
<tr>
<td>• entrepreneur climate is good</td>
<td>• imperfect market environment</td>
</tr>
<tr>
<td>• culture respecting knowledge and talent, stressing credit, encouraging individuality development and creation</td>
<td>• over heavy intervention of the state</td>
</tr>
<tr>
<td>• social capital – trust</td>
<td>• Bureaucratic networks sometimes have only one-way, top-down links.</td>
</tr>
<tr>
<td>• incorruptible, self-discipline, honest and high efficient government service</td>
<td></td>
</tr>
<tr>
<td>• industrial association is active</td>
<td></td>
</tr>
</tbody>
</table>
Characteristics of China’s industrial districts

① Large amount of employment are included
② Deregulation push, start-ups and spin-offs
③ **Buyer-driven or contractor-driven (OEM-oriented)**
④ **Systems of labour division with different geographical scales**
⑤ **Strong involvement of local government**
Buyer-driven and contractor driven

Global brand leader (Microsoft, Intel, IBM…)

Global Contractor (Solectron, Flextronics…)

Local industrial districts of firms in China

Chinese industrial districts of manufacturing firms are often specialised suppliers for large customers in other countries.
Structure of toothbrush enterprises in Hangji, Yangzhou

Hangji toothbrush cluster has formed a stable structure.

More than 1000 workshops for tourist goods

Family workshops

Local SMEs

local Leading SMEs

MNC

Colgate Sanxiao

5A  Yiinjiete
  Mingxing  Shuguang
  Jingxong  Jingbaili

Bailu, Saite, Xinhua, Caihong ....
Hangji’s toothbrush chain activities at different scales
Taiwanese-based Nike contract and Footwear ID formation
### Characteristics of China’s industrial districts

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Large amount of employment are included</td>
</tr>
<tr>
<td>2</td>
<td>Deregulation push, start-ups and spin-offs</td>
</tr>
<tr>
<td>3</td>
<td>Buyer-driven or contractor-driven (OEM-oriented)</td>
</tr>
<tr>
<td>4</td>
<td>Systems of labour division with different geographical scales</td>
</tr>
<tr>
<td>5</td>
<td>Strong involvement of local government</td>
</tr>
</tbody>
</table>
Foshan, Guangdong Province
Case: Sub-system of furniture-related districts in Foshan, Guangdong Province

Lecong: furniture trade fair
Lunjiao: furniture machines
Ronggui: furniture paint and dope
Leliu: hardware and adornment
Longjiang: furniture production

Local government
Local professional training school
Producer services: logistics, advertisement
Furniture industrial association

[Map showing the relationships between different districts and services related to the furniture industry in Foshan, Guangdong Province]
### Characteristics of China’s industrial districts

1. Large amount of employment are included  
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5. **Strong involvement of local government**
5. Strong involvement of government

- Local government
  - Creating professional colleges and schools
  - Holding specialized exhibition of industries
  - Set up specialized industrial parks, exhibition centers and trade buildings
  - Building and financing technology innovation centers (TICs)

Since 1998, TICs began to set up, until 2003, there were 74 TICs, accounting for 45.7% of 162 clusters in GD province.

The average investment into the establishment per TIC was US$ 385,000 (3.12 million Yuan)\(^1\) financed jointly by local government at multi-level, provincial, municipal, and townships in 2003.

\(^1\) 1 US$ = 6.1 RMB Yuan.

(WANG Jun, 2006)
The role of Specialized Market

- The specialized market, a unique space in most of the important industrial clusters in China, The growing production also contributed to the establishment of local specialized markets which, given the general shortage of consumer goods in the country, soon became national distribution centers of specialized goods.

- Compared to transaction markets in other developing countries, the high intervention of the public sector can be pointed out as the most characteristic feature of the specialized market.
Create industrial parks

- For example, in Jiangsu province, Hai’an is establishing a "base in eastern China furniture industry."
- According to reports, the base covers an area of 13 square kilometers, including a furniture Creativity Center with a R & D center, etc.
The role of Industrial Association (Wenzhou case)

- Act as the bridge between the government and its members, the association influencing the cluster greatly and enhancing the reputation of the Wenzhou shoes products.
- The Association has made great efforts to improve the shoes’ quality, helps the members to open up the markets both at home and abroad, build and strengthen the electronic information facilities etc.
- The collective efficiency and the synergy of local production network are achieved.
China’s industrial districts face challenge

- The barrier of anti-dumping
- The barrier of eco-standard
- The problem of low-tech
- The lack of the awareness of innovation

Call for a further joint action
Challenges and Upgrading

Global Competition
- Technology regime
- Restrictive protectionist policies

Local Stress
- Raise of production costs
- Social and environment issues

Innovation and Upgrading

Race to the bottom
Relocation
Relocation to Inner Provinces for Lower Labour Costs

- Reasons causing this relocation:
  - The rising labour cost, land cost and environmental cost.
  - The resource is exhausted in some resource-based districts.
- The provincial government of Guangdong promotes the collaboration of the twin cities of the advanced one and the one lagged behind to build so-called “relocation parks”.
  - It plans to build more than 20 such parks in Guangdong.
- The relocation of many SMEs from coastal industrial districts to the regions in the central, western and northern China for reducing labour costs will lead to a new domestic division of labour.
- The coastal districts will become the outsourcers to lower-cost inner provinces and the centers of higher technology or design.
Towards innovation and creativity

- The great challenge facing China’s industrial districts is to meet intense global competitive pressures while avoiding the “low road” based on cost reduction and reaping the benefits that could come from the technological advancement of developed countries.

- At the beginning of 2006, the central government of China outlined several strategic tasks for building an innovation-oriented country. It has led China to confront issues of promoting innovative district.

- Developing core competencies through innovation and embedded localization is necessary. Labor training and education are much related to innovation.
• National Torch Plan special industry base

• Chenghai as an example

• MOST identified Chenghai as "National Torch Plan intelligent toy industry base.

Over 2800 toys manufacturing enterprises, 95% private-owned, 50% export value of China, famous for Christmas products.

Started in late 1980s, Chenghai toy industry has grown from OEM production to ODM (own design and processing), OBM (own brand manufacturing).

Many companies invest in R & D accounts to Sell Amount of 3% to 5%
Beyond cluster: global-local tension perspective

- Clusters should be viewed in the perspective of global value chain and local supply chain.

- A value chain could thread through multiple clusters in different localities of a regional economy.
  - cluster-based initiatives a highly desirable policy tool for many cities and regions in their efforts to increase growth, productivity, and employment.
  - The key task facing China should be to foster innovative clusters instead of building more “low road” ones.

- A theory of the cluster must do more than provide an account for the benefits of co-location. It must also include an explanation for the conditions that may lead to the move or decline or extinction of the cluster.
Conclusion

Implications of China’s Industrial districts

- Industrial districts in China benefit both MNCs and NIS.
  - The clusters of China functioned very well for multinational buyers and contract manufactures, but their roles for build competitive advantage of the country and the region are limited.

- The key task facing China should be to foster innovative industrial districts instead of building more “low road” ones.

- China needs to learn as quickly as possible not only in adopting lessons from other industrial districts but also in seeking to position local industries in the global value chain and in strengthening their competitiveness in the global market.

- Policies need to differ for different sectors.
Thank you for your attention!

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