行政院國家科學委員會補助專題研究計畫 □期中進度報告 ■期末報告

全球化、區域經濟與治理：從比較觀點看渤海灣區的發展--區域創新治理與全球發展：渤海灣、長三角與國際之比較研究

計畫類別：□個別型計畫 ■整合型計畫

計畫編號：NSC 97-2410-H-001-113-MY3

執行期間：99 年 8 月 1 日至 101 年 7 月 31 日

執行機構及系所：中央研究院

計畫主持人：冷則剛

計畫參與人員：博士班研究生-兼任助理 陳蓉怡

博士班研究生-兼任助理 李冠成

本計畫除繳交成果報告外，另須繳交以下出國報告：

□赴國外移地研究心得報告

■赴大陸地區移地研究心得報告

■出席國際學術會議心得報告及發表之論文

□國際合作研究計畫國外研究報告

處理方式：除列管計畫及下列情形者外，得立即公開查詢

□涉及專利或其他智慧財產權，□一年□二年後可公開查詢

中 華 民 國 101 年 10 月 31 日

行政院國家科學委員會補助專題研究計畫

期末報告

全球化、區域經濟與治理：從比較觀點看渤海灣區的發展--區域創新治理與全球發展：渤海灣、長三角與國際之比較研究

NSC 97 – 2410 – H – 001 – 113 – MY3

計畫主持人：冷則剛

中 華 民 國 101 年 10 月 31 日

目錄

摘要

在中國的經濟和城市發展中，高科技園區（high-tech industrial parks）的開發已蔚為風潮。目前學界的相關研究大多聚焦於地方政府所扮演的積極角色，或者是園區技術創新所造成的結果，鮮少關注高科園區的空間生產過程與城市發展效果之間的內在關連。為了填補理論空缺，本研究認為發展高科技園區作為一個空間政治經濟學的個案，中央政府和地方政府透過土地重整來促進高新技術產業的資本累積，藉此尋求經濟成長。我們以北京的中關村和上海的楊浦區為例，研究結果顯示兩個地方的區政府，無論是在促進發展或打著高科園區的招牌來提升計畫區土地價值上，皆扮演相當積極的角色。最後，由於其快速的財政增值潛力，興建高科技園區已經成為地方政府更為熱衷追求的地產項目。然而，弔詭的是，我們認為這個地產主導的開發計畫實際上對於高科技展業卻產生一些負面的影響，該情況在楊浦區又格外明顯。

關鍵字：高科技產業園區、北京、上海、中關村、楊浦區、城市發展

Abstract

The development of high-tech industrial parks (HTIPs) has become a salient phenomenon in China's economic and urban development. Current studies regarding the development of HTIPs tend to focus either on the active role of the local government or on the consequences of technological innovation that those parks may have brought about. Very few studies have paid attention to the intrinsic relationship between the process of space production in building HTIPs and the effect on urban development. To fill this theoretical gap, this paper considers developing HTIPs as a territorial project through which both central and local states seek to promote economic growth by reorganizing their territories so as to facilitate capital accumulation based on high-tech industries. We use Beijing's Zhongguancun and Shanghai's Yangpu areas as examples to show the active role played by district governments in promoting and using the HTIP symbol to develop the designated land. In the end, due to the quick tax-generating potentiality, the construction of HTIPs has given rise to property-led projects which district governments are much more enthusiastic in pursuing. The property-led development projects paradoxically, as we argue, may have generated some negative effects on the promotion of high-tech development, which is especially apparent in the case of Yangpu district.

Key words: high-tech industrial park, Beijing, Shanghai, Zhongguancun, Yangpu, Urban Development

本研究計畫歷經三年之正式執行期限，並延長一年彙整文獻及出版，業已出版期刊論文及會議論文數篇。由於本研究係整合型研究，因此子計畫主持人與研究團隊密切合作，共同發展比較面向之研究成果。

就筆者負責之子題而言，主要合作之對象為計畫總主持人政治大學王振寰教授。就分工而言，王教授負責環渤海，筆者負責長三角。過去三年來研究要項主要選擇環渤海的北京，及長三角的上海。進步細分，則選擇北京的中關村，及上海新興的楊浦區，作為主要田野研究的對象。

環繞國科會研究計畫主題，筆者已出版田野研究成果。並針對階段性之研究成果共同撰寫，並與政大王振寰教授合作完成兩篇論文。此兩篇論文比較上海與北京之高科技發展，但重點有所不同。第一篇著重分析制度創新，並以新制度主義與地方政府之發展模式為分析重點。本文標題為 Tse-Kang Leng and Jenn-hwan Wang, “Local States, Institutional Changes, and Innovations Systems: Beijing and Shanghai Compared,” 。本文於 2011 年完成，經嚴格審查過程，本文已獲 SSCI 期刊 *Journal of Contemporary China* 審查通過，將於 2013 年刊登。

從本國科會計畫成果出版之第二篇則以空間政治經濟學角度分析，探究區政府於空間治理中，如何達成都市化的目的，並描繪地方發展型國家的另一種風貌。本篇標題為：Jenn-hwan Wang and Tse-Kang Leng, “Production of Space and Space of Production：High Tech Industrial Parks in Beijing and Shanghai,” *Cross Currents* (University of California, Berkeley)本文業經 UC Berkeley 中國研究中心兩位匿名外審通過，刊登於 Cross Current 網路首刊號 http://cross-currents.berkeley.edu/e-journal/inaugural-issue，並獲選刊登紙版本第一期。

本報告以下之內容，即展示研究之成果，主要是第二階段從空間政治經濟學比較環渤海與長三角的研究心得。

The Production of Space and Space of Production: High Tech Industrial Parks in Beijing and Shanghai

Jenn-hwan Wang*,
Chair Professor
E-mail: Wangjh@nccu.edu.tw
Graduate Institute of Development Studies,
Director of Center for China Studies
Research Fellow (Joint Appointment)
Institute of International Relation
National Chengchi University, Taiwan

Tse-Kang Leng,
Research Fellow,
E-mail: tkleng@nccu.edu.tw
Institute of Political Science,
Academia Sinica,
Professor (Joint Appointment)
Department of Political Science,
National Chengchi University, Taiwan

*Correspondent author

Acknowledgment:

The research funding of this paper is provided by National Science Council of ROC (97-2410-H-001-113-MY3; 97-2410-H-004-077-MY3) and Top University Grant of National Chengchi University. The authors would extend their gratitude to You-tien Hsing, Larry Ma and anonymous reviewers for their comments and suggestions.

Abstract

The development of high-tech industrial parks (HTIPs) has become a salient phenomenon in China's economic and urban development. Current studies regarding the development of HTIPs tend to focus either on the active role of the local government or on the consequences of technological innovation that those parks may have brought about. Very few studies have paid attention to the intrinsic relationship between the process of space production in building HTIPs and the effect on urban development. To fill this theoretical gap, this paper considers developing HTIPs as a territorial project through which both central and local states seek to promote economic growth by reorganizing their territories so as to facilitate capital accumulation based on high-tech industries. We use Beijing's Zhongguancun and Shanghai's Yangpu areas as examples to show the active role played by district governments in promoting and using the HTIP symbol to develop the designated land. In the end, due to the quick tax-generating potentiality, the construction of HTIPs has given rise to property-led projects which district governments are much more enthusiastic in pursuing. The property-led development projects paradoxically, as we argue, may have generated some negative effects on the promotion of high-tech development, which is especially apparent in the case of Yangpu district.

Key words: high-tech industrial park, Beijing, Shanghai, Zhongguancun, Yangpu, urban

1. Introduction

During the past two decades, high-tech industrial parks (HTIPs) have increasingly been promoted as growth engines in various cities in China to facilitate regional and urban development as well as generate technological innovation. Large areas of urban and rural lands have been developed and redeveloped to support the dream of becoming high tech nodes in the global technological production networks. Among them, Beijing's Zhongguancun (ZGC) science park was the earliest (1988) and has been regarded as the most ambitious project that might not only have been able to attract a huge amount of foreign investment but also to generate indigenous innovation due to the abundant human resources in the city. Shanghai and other cities have followed suit.

Indeed, the Chinese state in the late 1980s had made two very important reform programs to rejuvenate the aged R&D system, the first one being the 863 plan (1986) and the other the Torch Program (1988). The former aimed to pool resources and scientists together wherever possible to serve as a bridge and to keep up with international high-technology development in several high technologies. The latter, by contrast, was intended to learn the experiences and successes of Silicon Valley in order to build China's technopoles so as to revitalize China's traditional industries, and also promote the creation of new and high-technology enterprises (Wang et al., 1998; Zhou, 2005; Segal, 2003). It was in such circumstances that ZGC was designated as China's first HTIP in 1988. By 1993, 52 nationally recognized zones existed throughout the country, covering 28 of the 31 provinces, autonomous regions and centrally-administered municipalities[1]. These HTIPs soon became the growth poles in each region, especially in the cities, and thus high tech industrialization has become intertwined with high rise urbanization, especially in the two major world cities in China, namely, Beijing and Shanghai.

We regard the creation and re-creation of HTIPs in China in general, and in Beijing and Shanghai in particular, as a process of space production in which spatial transformation concurs with China's pursuit of modernity and high-tech

[1] The number of nationally recognized HTIP has increased over the years, it has been added up to 88 zones in 2011.

industrialization. In this respect, as Harvey argues, modernity entails the conquest of space, the tearing down of all spatial barriers, and the ultimate 'annihilation of space through time' (Harvey, 1989:205). Thus, the central state wants to open its territory to global capital so as to attract foreign investments and to demand the most updated technologies. The municipal governments in turn want to reorganize urban space through the strategy of building new HTIPs so as to pursue rapid capital accumulation and technological innovation. Finally, the district governments are able to use the high-tech banner to attract capital investment, especially in the real estate sector. The High Tech Park has become a representation of progress which is hoped to bring high value-added economic activities to the locality and ultimately contribute to the district governments' revenue. Ultimately, the HTIP has become a territory that has become fused with various forces contesting for its formation and space production.

Existing studies on China's development of HTIPs are mainly focused on two issues: the first approach emphasizes the role of the local state in building HTIPs and promoting local economic development (i.e., Segal, 2003; Hsing, 1998; Zweig, 2002; Wang and Lee, 2007), whereas the second stresses the importance of cluster effects in generating technological innovation and shaping the local innovation system (Zhou, 2005, 2008; Zhou and Tong, 2003 Wu, 2007). Very few studies, however, have paid attention to the intrinsic relationship between the process of space production in building HTIPs and the effect on urban development. To fill this theoretical gap in the literature, this paper regards developing HTIPs as a territorial project through which both central and local states seek to promote economic growth by reorganizing the spatial structure in their territories so as to facilitate capital accumulation based on high-tech industries.

We use Beijing's ZGC and Shanghai's Yangpu area as examples to show how district governments in both cities have actively promoted the construction of HTIPs and some have used them as symbols to develop the designated land. In the end, due to the quick tax-generating potential, the construction of HTIPs has given rise to property-led projects, if not replacing high-tech development, which district governments are much more enthusiastic in pursuing. The property-led development projects, we argue, may have created unexpectedly negative effects that have affected the promotion of high-tech development, which was especially apparent in the case of

Yangpu district. Our research has been mainly based on data collected from field trips to both cities as the authors conducted intensive interviews in Beijing in November 2008, August 2009, and January 2010; and in Yangpu areas conducted in August, 2009 and January, 2011. The total interviewees in both cities exceed 50 people.

2, High-tech industrial parks as territorial projects

Urban development has been experiencing a great transformation in the age of globalization. In a world of fast information flows, cities and regions are regarded as being more flexible in terms of adapting to rapidly changing conditions in markets and technology than are national governments. Technopoles, of which HTIPs are a representative form, have been planned and established in many regions to promote knowledge learning in order to generate both national and regional wealth. Technopoles here are defined as cities or regions that 'contain significant institutions of a quasi-public or nonprofit type, such as universities or research institutes, and which are specifically implanted there in order to help in the generation of new information' (Castells and Hall, 1994:1). In order to build technopoles, cities or regional governments have to create conditions for firms to reside, negotiate with multinationals for them to stay and foster conditions to nurture small venture firms. In other words, an innovation milieu that may create a synergy effect for knowledge creation has to be implanted (Castells and Hall, 1994:9; Camagni, 1991). The development of Silicon Valley has become an embryonic model for the rest of the world to imitate.

To create an innovation milieu is in fact not only a project for spatial reorganization, but is also an image-making venture that is central to market competition for investment. In order to create a new space for innovation, leaders of a city government become entrepreneurs that engage in reorganizing the city's physical space as part of a global campaign to attract both foreign and domestic firms. Thus, technopoles are also space projects that involve creative destruction whereby certain old historical spaces are destroyed and new spaces are created for building an environment for knowledge creation. Harvey (1989) identifies this trend of city and regional competition to be urban entrepreneurialism.

According to Harvey (1989), capitalist accumulation can only continually accelerate temporally and spatially. It is based on both an immobile configuration of

territory and socially constructed institutions that enable capital circulation. Therefore, each successful round of capital accumulation has been built upon the existing socially produced infrastructures that facilitate the accelerated circulation of capital through space. Harvey's perspective on the historical and spatial dimension of capital accumulation can better be described by Massey's (1984) view that emphasizes the sedimentation of historical layers of a local area. Massey argues that each local area contains not only one form of economic structure; instead, it is a product of long and varied histories. Some forms of organization die away, while some still linger on and continue to have influence over new rounds of development. Therefore, when viewed from this perspective, 'the structure of local economies can be seen as a product of the combination of 'layers' of the successive imposition over years of new rounds of investment, new forms of activity' (Massey, 1984:114).

With the increasing scope and scale of globalization, the central and local states' efforts in strengthening the economy's competitiveness reflect a multi-level and multi-scalar reconfiguration of the territory (Brenner, 1999; Jessop, 2002). That means, different levels of governments make their effort in reorganizing spatial structure to enhance the competitiveness of their territories. For the central state, globalization conditions have facilitated the loosening of domestic regulations in favor of the imperatives of capitalist accumulation. The competitive state has emerged to create a friendly investment environment in order to keep the economy innovative and competitive (ibid). This re-articulation of the global with the local is an attempt to create a new spatial structure, or called the spatio-temporal fix by Harvey (1989) indicating the structural coherence of time and space in generating smoother capital accumulation, for managing the local economy to meet the globalization demand.

For city managers, current urban governance has become much more oriented toward the provision of a 'good business climate' through which all sorts of construction are embarked on to lure capital into the local territory. Although there are no clear recipes to determine which types of plan will be successful in bringing new investments, city governments are forced to adopt approaches that increase the amount of fixed local infrastructural investments to attract mobile global capital. Space reconstructions and various image-making programs are undertaken to promote the city's competitiveness. A new growth machine, which especially contains the real

estate sector, is formed to promote the city's rejuvenation and re-orientation (Logan and Malotch, 1987; Wu, 2002; Jessop and Sum, 2000).

To sum up, space is not merely a physical container within which capitalist development unfolds. It involves social and political elements that ultimately shape the ways in which the economy is developed. By encountering the increasingly globalized world, the state, local government and related actors are continually constructing, deconstructing, and reconstructing the historically specific areas through which multi-scalar territorialization has proceeded to facilitate capitalist accumulation and innovation (Brenner, 1999:42). China in this specific historical era has focused much on using the HTIP strategy to develop its economy and to enable its technology to catch up with the advanced countries (Ge, 1999; Wu, 2002; Zheng, 2010). Moreover, due to each city's history and various types of heritage, city governments have different capacities and ways of building HTIPs. As will be shown, the main factor that drove Beijing's Haidian district to develop into China's Silicon Valley was due to its hosting of prestigious universities and R&D institutes. It was due to this historical heritage that had enabled Haidian to become the core zone of ZGC at the earlier stage of economic reform. Nevertheless, the similar historical heritage in Shanghai had not been able to create the similar advantage. Yangpu, where most prestigious universities in Shanghai had resided, was ignored by the municipal government in its ambitious Pudong plan. It was only in the early 2000s when the Yangpu district government tried to utilize the banner of HTIP and to collaborate with those universities to regenerate its local economy did the Shanghai municipal government begin to support the area to become an innovation-based region. These two cases will show how district governments have fully utilized the HTIP strategy in different historical time to develop their economies and to upgrade their development level. In the process, not only have the city spaces been transformed, but the city's territorial organizations have also been altered to fit the demands of capital accumulation on a global scale. The creation of HTIPs in due course has resulted in the booming of the real estate sector that has gained even more attention from the district governments. The details are discussed in the sections that follow.

3. Beijing's ZGC – China's first Silicon Valley

Beijing's ZGC is described as the most innovative region in China (Segal, 2003;

Zhou, 2005, 2008). The achievement of ZGC has been an accumulated and evolutionary process of institutional reforms. At the initial stage of the reform in the early 1980s, the area emerged spontaneously due to the increasing emergence and concentration of non-state-owned enterprises in Haidian district where Tsinghua University, Peking University and the Chinese Academy of Sciences (CAS) were located. As the state recognized the potential it had to imitate Silicon Valley in the U.S., because of its high concentration of prestigious universities and R&D institutes[2], ZGC was granted the status of an experimental zone for its development.

3.1 ZGC as a technopole project – The central state's policy

During the earlier stage of China's economic reform, the central state undertook various incremental approaches to reform the stagnant economy. One of them was the fiscal reform that unleashed the material incentives for local officials to promote their local economies (Oi, 1992, 1995). The second was the reform of the science and technology (S&T) policy that encouraged local government to establish HTIP in order to promote foreign investment.

China's fiscal reforms in the early 1990s clearly redefined the localities' share of the tax revenues and granted them the rights to a fiscal surplus. In 1994, China experienced a fundamental fiscal decentralization reform called the tax sharing system reform, which included central-local revenue sharing on a more transparent, objective basis. Local government was granted the power to generate extra-budget revenue besides the fixed ratio of tax. For example, according to the regulation of the state, 60% of land taxes belonged to local government, while the remaining 40% belonged to the central state. However, among the 40% of the taxes, 35% were to be reimbursed to local government. Therefore local government had a strong incentive to lend the land to developers, because as much as 95% of the income generated by leasing the land would return to the pockets of the local government (Zheng, 2010:93). This financial decentralization led to the emergence of 'local state corporatism' (Oi, 1992, 1995), through which local officials routinely manipulated regulations to allow

[2] There are 68 universities (including China's most prestigious universities, Peking and Tsinghua), 213 state-sponsored R&D institutes (including the Chinese Academy of Sciences, CAS), and over 300 thousand students in Beijing (ZGCAO, 2008).

enterprises to receive the maximum tax advantages and pushed local economic development to the point of sometimes even disregarding national objectives (Segal, 2003; Zweig, 2002).

The unleashing of the local government's drive for economic development was also related to the policy of developing the Economic Technology Development Zone (ETDZ). Local governments used tax incentives or subsidies to attract foreign capital into the zones to create economic growth. These zones needed to be approved and regulated by the central state (the Ministry of Commerce), or by higher levels of government. The HTIP was one of the special types of development zones which was promoted and administered by the Ministry of Science and Technology (MOST) in the central state through the Torch Plan. By studying the success of the development of Silicon Valley, the Chinese government wanted to use the Torch Plan to promote high-tech parks in the country so as to create environments conducive to the development of high-tech industries by combining research with production activities. In 1988 the central government decided to develop Beijing's Haidian district as the 'Silicon Valley of China" and called it the Beijing Experimental Technology Zone (BEZ). This was the first high-tech zone recognized by the central state.

In the initial stage of BEZ's development, the main administrative office that was responsible for the management of the zone was established under the Haidian district government. In the process, because of the inclusion of other parts of the city into BEZ, a new administrative office was set up under the city government in 1997 to perform the coordination work among the districts; whereas the zones in the various districts were still managed mainly by their own district governments. In 1999, the central state approved the city's application to reform the administration and to rename BEZ as ZGC. A new administrative office was set under the city mayor, called the ZGC administrative office, which had an advisory committee consisting of members such as the City Mayor, Minister of Science and Technology, Minister of Education, Deputy President of the Academy of Sciences, the Deputy Mayor and some university presidents (ZGCAO, 2008). The central state determined to establish ZGC as one of the most innovative regions in the world.

ZGC has developed rapidly since its inception in the late 1980s and has included even more zones developed by different district governments as part of it. Over the

years, the development of the ZGC has created an agglomeration effect for the high-tech industries, especially the IT industry. It gathered over 13,000 firms in the zones in 2006, including Legend, Stone, Fangzheng, and MNCs such as Lucent, HP, Ericsson, Hitachi, Siemens, etc. (ZGCAO, 2008). In 2009, the State Council supported Beijing government's proposal to re-create ZGC as a National Innovation Demonstration Zone so as to speed up innovation and to create world class enterprises.

3.2 ZGC as the city government's territorial project

Differing from HTIPs in other places, such as Taiwan's Hsinchu HTIP, in which case the park was originally located in a rural agricultural area that was much easier to clear for development, Beijing's BEZ was initially located in an established city district. The initial plan of BEZ in the earlier stage was to develop 100 acres in Haidian district to host high-tech enterprises; however, because of the concentration of buildings in this area, the lands that were able to be developed covered only 10 acres. Later this area was extended to remote country-side of Haidian district (i.e. Shangdi IT industrial zone) to host manufacturing activities. In the meantime, both the Changping county and Fengtai district governments were eagerly applying to Beijing city for new ETDZs in their jurisdiction in order to boost their local economies. These two districts were finally included as part of BEZ in 1991 as the Beijing city government and the central state decided to expand the development area of BEZ for hosting manufacturing activities that were not suited to locations in the inner city.

As BEZ became a symbol of high-tech development that was able to generate economic growth, many other district governments also began to apply to be included in BEZ. The district governments of Beijing city were eagerly applying to become part of the booming high-tech industry after 1999 when BEZ was renamed ZGC. Thus, ZGC thereafter continued to expand. Currently, there are ten zones under the ZGC banner which are located in various unconnected localities within the Beijing municipality. For example, Fengtai zone is located in the southwestern area of the city, Beijing's Economic and Technology zone is located in the southeastern end of the city known as Yizhung, and Changping zone is located in the northwestern end of the city. In 2006 the State Council finalized the ZGC development plan with a total development area of 232.52 KM^2, of which 131.84 KM^2 was located in the inner city

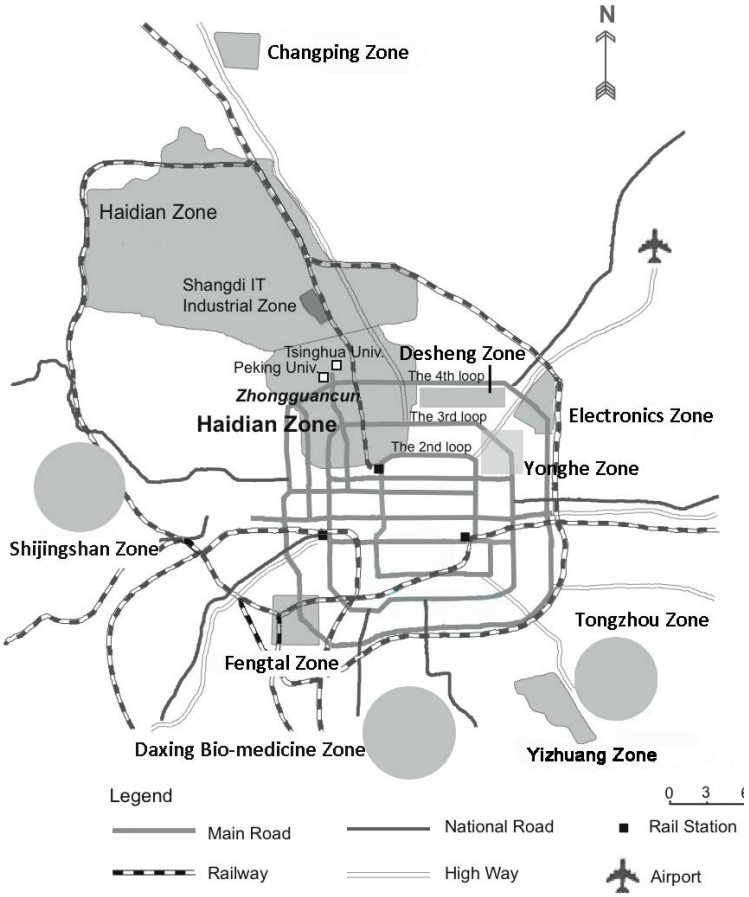
and the remaining 100.68 KM^2 consisted of new land for development that was mainly located in rural areas (ZGCAO, 2008). These zones, their locations, and their major economic functions are described in Table 1 and Map 1 below.

Table 1: Economic zones of ZGC

Year	Zone	District	Specialization
1988	Haidian zone	Haidian	ICT, all high-tech types
1991	Fengtai Zone	Fengtai	Headquarters
1991	Changping Zone	Changping	All types, including biotechnology
1997	Electronic Town	Chaoyang	Electronics and others
1997	Yizhuang Zone	Daxing	Manufacturing for all types
1999	Desheng Zone	West City	Cultural creativity
2006	Yonghe Zone	East City	Cultural creativity
2006	Daxing CBP	Daxing	Biotechnology, pharmaceutical
2006	Tongzhou Zone	Tongzhou	Electro-optical industry and others
2007	Shijingshan Zone	Shijingshan	Media and cultural creativity industry

Sources: ZGC administrative office web, http://www.zhongguancun.gov.cn/

Map. 1 Location of Zhongguancun's 10 zones



The development of Beijing's ZGC also has a lot to do with science parks established by universities and R&D institutes. These institutes, following the guidelines of the Torch Program and supported by MOST and the Ministry of Education, tended to establish their own parks to generate university-firm relationships. The earliest university's HTIP was established by Peking University in 1992, and then Tsinghua University and other institutes followed suit. Now Beijing has 10 university HTIPs.

The universities' HTIPs indeed have created some smaller firms by their incubation centers and have hosted many global and domestic firms, both small and large. One of the most successful university HTIPs is Tsinghua's. It is located in the center of Haidian district, using 25 acres of campus land to develop into an area that is inhabited by many high-rise office buildings. Due to the university's reputation as China's MIT and its good location, this HTIP has attracted many well-known enterprises such as Google, Sun, P&G, NEC and Tsinghua University enterprises such as Tsinghua Unis Corp. to locate there.

ZGC has indeed attracted many domestic and foreign firms to take up residence, especially in the Haidian district. Despite its success in terms of developing high-tech industries, ZGC has become filled with many glamorous buildings and famous MNCs. ZGC thus signifies riches and fame for the district which in turn has driven district governments and universities to join the high-tech and speculative game. One of our informants said very clearly, 'once the ZGC label is used, the price of the real estate jumps' (Interview data[3]). This echoes what He and Wu (2009) observe in Shanghai, where district governments have a strong incentive and high degree of discretion in land development to pursue instant returns and visible achievements, 'of which property-led redevelopment is the most common form' (p.298). This property-led redevelopment project, combining the label ZGC, can be best illustrated in the Fengtai district's "Headquarter Economy Project" as discussed next.

3.3 ZGC as a form of representation – Fengtai' s Headquarter Economy

The Fengtai zone was established by the Fengtai district government in 1991 and was included in BEZ in 1994. It is located in the southwest area of Beijing city where 5km^2 of the land is allocated to BEZ. The motivation behind developing this area into ZGC was mainly due to the efforts of the district government in promoting this area's economic development. Owing to its historical legacy, the southwest end of Beijing city was described as one of the poorest areas, just as the statement 'The East is rich, the West is prestigious, the North is poor, and the South is despicable' sums it up. The competition among districts drove local governments to use the special economic zone approach to stimulate the economy to grow.

The first stage of the development of Fengtai zone was initiated in 1992 when many local lands were converted for either industrial or residential use. However, after the lands had been developed, within a period of a few years, due to the rising rents, most manufacturing activities moved to Hebei province or to the outskirts of Beijing city and the industrial lands were once again converted into office buildings. In the second stage of Fengtai zone's development that started in 2002, the district government thus gave up developing manufacturing land, due to the failed attempts in the former stage, and instead stressed the importance of office buildings. At this stage,

[3] Interview Beijing Officer, May, 9, 2011.

the district government collaborated with a British company (Daofeng Co. which actually was a company led by an overseas Chinese) to develop this area into a so-called 'Advanced Business Park'. However, it might have been due to this term having a too obvious connotation of real estate development that it was later changed by the Fengtai district government to 'Headquarter Economy'. The business park consisted of over 500 office buildings, thousands of apartment buildings, a 6-star hotel, and other related recreational facilities and shopping centers. The whole park was obviously a huge property-led project that intended to use the ZGC label to promote local economic development.

The district government worked very closely with this Daofeng company to clean the land, paved the road, and solved many related administrative barriers in order that this 'Headquarter Economy' could proceed smoothly. All the expenses of those works were met by the district government and the company devoted very few resources at this stage[4]. Even more interesting was the fact that the district government granted the Daofeng Company the manufacturing land, whereupon the company developed this area into luxurious residential and office buildings and thus generated enormous profits from the price differences. Moreover, the Fengtai district government granted the Daofeng company the right to use ZGC's tax incentives to attract firms to locate themselves in the park, including tax exemption for the first three years of investment, and reduced the tax rate from the fourth to the sixth year to 7.5% annually. In addition, it also granted the privilege of paying half of the utility fees, and granted residence permits to professionals from other provinces, etc.

The example of the Fengtai zone clearly shows how the district government used the ZGC label to develop the real estate sector in the name of an HTIP. The real content of Fengtai zone is in fact company headquarters that have little relationship with the high-tech industries[5]. Currently, the Headquarter Economy has attracted many companies to locate there. Most of them had been Beijing-based state-owned

[4] Data adapted from http://www1.ce.cn/cysc/fdc/fc/201009/19/t20100919_20505782.shtml, Accessed on September 19, 2010.

[5] Data adapted from http://www1.ce.cn/cysc/fdc/fc/201009/13/t20100913_20501044.shtml, Accessed on September 13, 2010.

companies, some were big state-owned companies from other provinces, and only a very few were MNCs (Zheng, 2010:150). As a result, the originally very small Daofeng Company became a giant real estate developer[6] in the process.

3.4 ZGC as a contesting space

As has been shown above, HTIP has been regarded by different levels of the state in China as promoting both local economic development and technological innovation. ZGC in Haidian district, due to the concentration of R&D institutes and the state's support, achieved a successful increase in high-tech industries, especially in the IT sector, and then the ZGC label was expanded to other districts. Now ZGC has become a real estate label that has sometimes outpaced the value of developing high-technology industries. This is because technology learning and innovation need time to be nurtured, while the real estate sector can by contrast generate an immediate capital return for both investor and local government.

The booming of the real estate sector, however, has had its downside in terms of the development of technology, because it has pushed up the rental costs to a level that is not conducive to the start-ups' or smaller firms' survival in the Haidian area in recent years. For example, according to our informant, the rent rate in the core area of Haidian district (the area in front of Tsinghua university) was about 7 dollar per square meter each day in 2008, now (2010) it has rised to about 12 dollars in the same area[7]. Many smaller start-ups have already moved out from the expensive area in Haidian district and sought cheaper places on the outskirts of the city in order to survive (Interview data[8]). The booming of the real estate sector in ZGC has in fact created an economy that is favorable to large firms and actually stifles the spirit of entrepreneurism which brought about ZGC in the first place.

4. Shanghai's Yangpu— Transferring the old industrial space

[6] Chen, Haibao, "Revealing the Secrecy of the Headquarter Economy" (Zongbu jidi jiemi), China's Real Estate Newspaper [January 25, 2007] http://blog.linkshop.com.cn/u/chb2323/archives/2007/89070.html, Accessed on August 14, 2011.

[7] Interview Beijing Officer, January, 20, 2011.

[8] Interview Beijing Manager, November/15.2008.

Shanghai demonstrates a different case to Beijing's ZGC. The rebirth of Shanghai began with the Pudong redevelopment project after Deng Xiaoping's southern tour in 1992. Integrated with the Pudong project to construct Shanghai's service and financial center, the Zhangjiang HTIP was developed to promote new fields of manufacturing and design, such as IT, semi-conductors, and biotechnology. A more recent attempt to imitate the HTIP development method but adopt a bottom-up approach to rejuvenate urban space is the Yangpu case. In contrast to ZGC's nurturing of new non-state-owned enterprises based on the IT industry, the Yangpu case demonstrates the district government's efforts to renovate and upgrade the heavy and old industries, such as steel, embedded in the old urban center. Similar to district governments in Beijing, the Yangpu district government fully utilized the HTIP banner to re-territorialize its urban space.

4.1 Yangpu as a fresh model of space reproduction

The start of the new Yangpu project began with the launch of the "Guideline of the Yangpu Knowledge Innovation District" document released in 2004. In this guideline, the Shanghai metropolitan administration reconfirmed its policy to integrate three development elements in this district: university campuses, high-tech parks, and local communities. It was dubbed the "tri-party cooperation".[9] After less than a decade of development, the new project of rejuvenating Yangpu did not stop at "breeding" or "building" a high-tech center. It had a much more comprehensive goal of urban redevelopment and space utilization. The master design could be realized by Yangpu's project of establishing the developmental framework of "one center, one city, one river, three quarters". According to the design, one center refers to the sub-urban center of the Wujiaochang-Jiangwan area; one city refers to the new Jiangwan township; one river refers to the creative and cultural center on the north bank of Huangpu river; three quarters refer to the Fudan-Tongji university science zone, Dalian-Kongjiang road's modern service zone, and modern textile industry clusters along the Huangpu river. The urban renovation project was implemented by branding the old area with a knowledge-based economy. As demonstrated in the example of ZGC, the Yangpu case also provided proof of the active participation of

[9] For a more detailed analysis on institutional innovation and tri-party interaction, please refer to T. K. Leng and J. H. Wang, forthcoming.

the entrepreneurial-oriented local government. It reflected the important factors of territorial formation and space adjustment in the process of rebuilding a fresh Yangpu. Map 2 demonstrates the geographic location of the Yangpu district of Shanghai.

Map 2: Location of the Yangpu District of Shanghai City

Among the various actors of urban development and space rejuvenation, the district government of Yangpu played the key role in leading and coordinating. Being in charge of the distribution of urban land, the district government shouldered the task of land replacement, reservation, and capital accumulation. The establishment of the Yangpu Knowledge Innovation Region was a major vehicle for "branding" the old district with new content. Our interviews with local residents in Yangpu indicated that in the early stage of Shanghai's development in the 1990s, Yangpu was totally neglected. Even the public transportation system of urban overpass did not provide access to the Yangpu district. Yangpu was more or less isolated from the booming urban service sectors in Puxi and Pudong. This situation did not accord with Yangpu's potential as an area where major universities were located. Well-known universities such as Fudan and Tongji also suffered from an outdated urban district infrastructure. These universities thus established visible and invisible walls to separate themselves from the surrounding decaying environment.[10]

4.2 Yangpu's HTIP branding strategies

[10] Yangpu interview, February 11-13, 2009.

The Yangpu experience provides an illuminating case that shows how a local government engages in space production in entrepreneurial ways. In 1996, Shanghai established the Center for Land Development, which was to function as a land bank for the city. The land bank would purchase land-use rights, negotiate a profit-sharing plan with current users, and put the land parcels in a reserve for resale on the market in open-land auctions or through public tender. A successful land bank could help municipal governments centralize land supplies and coordinate land management and planning (Hsing, 2010:48). In the case of Yangpu, the main body of land banking has been the Yangpu Land Development Center (YLDC), under the direct supervision of the Housing and Land Management Bureau of Yangpu district. YLDC regained state-owned lands under the urban development plan, and put them into reserve. In the process of Yangpu's transition toward a knowledge-based region, YLDC has played a pivotal role in promoting the transformation of the territory through land use policies. YLDC controls most of the industrial lands which occupy 17.6% of the total land of Yangpu. YLDC has also established cooperative ties with the Management Committee of Yangpu High Tech Park (MCYHTP) in utilizing newly acquired land. The major function of such ties is to link policies of land use with the purposes of industrial upgrading and service enhancing.

Through the process of institutional linkages and branding, the Yangpu district government has successfully transferred many industrial lands into both service and commercial usages. According to 2010 statistics, the growth rate of Yangpu's service sector reached 76.5%, while the knowledge-related service business grew by 23%. [11] Tax revenue rose from 3.5 billion in 2003 to 10 billion in 2008. As to the disposable finance of the district government, it increased from 1.6 billion in 2002 to 7 billion in 2008 (Chen, 2009:5).

This transformation process has indeed brought about lucrative economic benefits to the district government. In addition to the transformation of the university region and surrounding areas, the new Jiangwan Town in the north and new creative and business district in the east have become the new focus of development. For instance, the last case of land bidding in 2010 reflected the ambition of the Shanghai

[11] http://www.cqcb.com/cbnews/instant/20110-1-08/800765.html. Accessed on April 11, 2011.

17th Cotton Textile Company to transfer the idle factory house on the northern bank of the Huangpu River into a fashion and creative center. Such efforts have been promoted collectively by the textile company and the Yangpu district government.

The University City project promoted by the Yangpu district government is another illuminating case. Different from other University City projects like Songjiang University city, the Yangpu project did not start the construction from scratch. The issue of land cleaning, road construction, and resettlement are crucial challenges to policy-makers and developers. According to various estimations, the total investment amount of the Yangpu University City for land use has reached 100 billion Yuan (Wan, 2004:94). The rise of the real estate market in Yangpu has been significant since the release of the "knowledge Yangpu" project[12].

Almost all the actors involved in the Yangpu project have served as engines of land development in the region, especially from the universities located in this area. For instance, Tongji Technology, a Tongji University holding company, established Tongji Real Estate Management Corporation (TREMC). Under TREMC, there are more than 14 branch companies engaging in various land development projects. These projects in the Yangpu district include Tongji Square, containing four-star hotels, restaurants, and shops outside the main gate of Tongji University. Other projects include residential housing units under the brand name of Tongji in surrounding areas.

4.3 The district government and real estate market

The Yangpu district government itself also controls several real estate related development companies. For instance, companies like Weibaixin and Xinyangpu mainly undertake the business of developing residential housing areas. Even the Yangpu Knowledge Innovation Investment Company is engaged in various fields of real estate development, including hotels, restaurants, and other recreational facilities (Chen and Yu, 2005, p. 57).

As the former party secretary of Yangpu Du Jiahao argued, knowledge-based

[12] In June 2007, a piece of land in the New Jiangwan Township reached the price of 12,509 Yuan per square meter. The price was 6,677 Yuan 7 months earlier. http://news.sina.com.cn/c/2007-07-04/093113372324.shtml, accessed on April 10, 2011.

clusters are closely related to the improvement of the investment environment in Yangpu. The new attempt to establish a fresh image of Yangpu has provided opportunities for developers to promote real estate markets. College parks around Fudan, Tongji and other famous universities, along with green lands of Huangxing Park, provide amenities for better living in the region. The Wujiaochang business district and New Jiangwan Township project will also enhance the urban function and livability in Yangpu. Together with the relocation projects to move 4 million old housing units and reconstruct 4.35 million square meters of land, the Yangpu project is a social engineering project that requests the participation of all the parties involved.[13]

Expansion of the land used by the universities has become a major strategy for the Yangpu district government to promote new brands of a university and knowledge-based Science Park. The Yangpu district government released lands around major universities for the purpose of university high-tech parks and new branch campuses. As indicated in Table 2, each university has its own research specialties and concentrations. The land coverage of university campuses in Yangpu have been expanded from 4.2 km^2 to 6.54 km^2. For instance, Fudan has been expanded from 1,600 acres to 4,000 acres, and Tongji has been expanded from 1,500 to 2500 acres, respectively. The Yangpu district government has certain shares of the stock in most of the university-affiliated scientific parks. Our interviews show that in the case of Fudan Scientific Park, the district government relocated the existing residents and sold the land to Fudan at very low price. Due to the recent booming of the Wujiaochang area, the market price of the real estate of Fudan Scientific Park has been soaring.[14]

Table 2. Specialties of University Science and Technology Parks in Yangpu District

	Item 1 /%	Item 2 /%	Item 3 /%	Item 4 /%	Item 5 /%

[13] Data adapted from http://news.eastday.com/epublish/gb/paper224/1/class022400001/hwz778163.htm, accessed on April 10, 2011.

[14] Yangpu interview, February 12, 2009.

Fudan Scientific Park	IT/ Electronics 45%	Consultation Services 17%	Bio-Medicine 8%		
Tongji Scientific Park	Architectural design 46%	IT/ Electronics 22%	Consultation Services 17%	Bio-Medicine 2%	
Yangpu Technology Innovation Center	IT/ Electronics 40.9%	Creative Industries 17%	Machinery & Electricity 13.2%	Bio-Medicine 12%	Environ. Protection 9.6%
U. of Shanghai Scien. and Tech. Park	Manufacturing Industries64.1%	Technology 24.8%	Commercial Facility 2.6%		
Shanghai Ocean University Scientific Park	Aquatic Products 58.3%	Creative Industries 12.5%	Machinery & Electricity 8.3%	Construction 4.2%	
Shanghai Intellectual Property Park	Technology 50%	Consultation Services 27%	Culture communication13%		
Shanghai University of Finance and Economics	Technology 42.8%	Finance 31.4%			

Source: Revised from Wang (2008), p. 148

The district government has also actively renovated the area surrounding Wujiaochang, and has promoted and named it as the Knowledge and Innovation Community (KIC). Wujiaochang, located in the heart of Yangpu district, was an outdated urban commercial center surrounded by major universities and public facilities. Since the very beginning, the reconstruction of the Wujiaochang project has not merely been a Research Park project. The main investment and development body of CID is Yangpu Knowledge Innovation Investment Company (YKIIC). The YKIIC is in charge of the tasks of relocation, land procurement, and pubic administration. The Hong Kong partner Sui-On Group undertakes the tasks of financial management, business operation and planning (Wang and Tian, 2008:53-55). This partnership is similar to the Xintiandi project in the urban center of Shanghai. The major difference with Wujiaochang is the “branding” of a knowledge-intensive center within a university town. The current price of housing in the CID is about 4,000 Yuan per

square meter, or 50% higher than the average prices of surrounding areas.[15]

The KIC project is a typical case of the collaboration between the district government and private companies. During the field trip, the authors found out that the main concern of the local government in the KIC project was to attract private investments to reconstruct the old district. Located in the Wujiaochang district of northern Shanghai, the KIC is surrounded by around fourteen universities, including the prestigious Fudan and Tongji universities. The goal of KIC is to utilize the attractiveness of major universities, and transfer the old Wujiaochang circular area into a service hub. The KIC thus serves as a mediator between the universities, district development, and the private enterprises. During our interviews in the Wujiaochang area, one senior manager of KIC indicated that the idea of reconstructing the Wujiaochang area is promoted and implemented mainly by the Yangpu district administration. It is totally different from the Zhangjiang model in Pudong in the 1990s.[16]

In brief, the northern Yangpu area, with KIC as the core, has gradually been transferred into a multi-functional business district. The "scientific park" is embedded within a reconstructed auxiliary urban center. In addition to the Wujiaochang—Fudan area, the Yangpu district administration has also signed agreements with Tongji University to promote the "Tongji Knowledge Economic Circle." Located in the south of Wujiaochang district, the focus of such a new initiative is to promote new service clusters such as architecture, environmental protection, machinery, and other related business pertinent to Tongji's specialties (Leng and Wang, forthcoming).

Both Yangpu and district governments in Beijing, as demonstrated in the previous sections, are attempting to use symbols and labels of high-tech development to boost urban development. In terms of high-tech clustering, Yangpu has achieved a certain degree of success as demonstrated by the Wujiaochang project. Since 2006, Wujiaochang and the surrounding areas have formed clusters of IT and service-oriented domestic as well as multi-national corporations. However, such

[15] Data adapted from http://sd.zhaoshang-sh.com/zsdt/133550822.html, accessed on April 5, 2011

[16] Yangpu interviews, January 15, 2011.

achievements have been accompanied by space re-production and branding of HTIP. Transferring space and combining it with new brands of high-tech zones have become rational decisions of Yangpu leaders to pack major urban areas with an integrated package of scientific parks.

The intervention of the real estate developers, however, creates a dilemma in promoting talent flows and a knowledge-based economy. Under the branding of major universities and knowledge innovation centers, the prices of housing and office spaces have escalated. Start-ups and even research faculties can no longer afford to live in the neighboring areas. In other words, the original idea of knowledge-intensive clusters was distorted due to the commercial and real estate development of the region. Scholars and experts have also raised sharp criticisms, arguing that many scientific parks have already become real estate parks. From this aspect, both ZGC and Yangpu are facing a similar dilemma of urban development and technological innovation.

5, Discussion and Conclusion

This paper regards developing an HTIP as a territorial project through which both central and local states seek to promote economic growth by reorganizing the spatial structure in their territories so as to facilitate capital accumulation. In this territorialization process, the central state, the municipal government and especially the district government have played important roles in reshaping the landscape of each city for the purpose of economic upgrading. Differing from other property-led development projects in China, this HTIP plan has involved not only local states and developers but also universities and R&D institutes. These actors have collaborated together to develop the territories in the name of high-tech development and knowledge innovation. Thus the planned areas, regardless of whether they are agricultural or established urban settlements, have had to be reshaped for hosting foreign and domestic firms or for office buildings. It is in this process that territorial places have been transformed into globalized spaces where capital has been able to move more freely to engage into manufacturing and commercial activities.

In both Beijing and Shanghai's cases, we have seen how historical sediments had created their effects on the territorial development in time (Massey, 1984). Beijing's Haidian district has hosted China's most prestigious universities and R&D institutes, thus the historical heritage had enabled it to become the core innovative area of ZGC

at the earlier and later stages of development. Nevertheless, it was also due to its city center status that set its limitation in engaging manufacturing activities, many district governments in Beijing later had the opportunity to establish and use the label of ZGC to boost local economies. Thus, by observing the success of Haidian district in promoting economic growth through HTIPs, the Fengtai and other district governments in Beijing has followed suit to uphold the HTIP in affiliating it with the label ZGC.

In contrast to Beijing's case, Shanghai's Yangpu district, where most prestigious universities in Shanghai had resided, was almost totally ignored by the municipal government in its ambitious Pudong plan in the 1990s. It was the Yangpu district government that had observed the success of ZGC and tried to utilize the banner of HTIP and to collaborate closely with those universities to regenerate its local economy. Innovation centers and high-tech parks have thus become symbols for district government to promote the construction of office buildings and lure commercial activities into the area. In the process, the real estate sector, along with the construction of HTIP, has brought about the growth of the local economy. Yangpu district government's effort however seems to create much more effects on the booming of real estate than it does on so-called knowledge-based economy.

The main differences that enable us to differentiate Yangpu from ZGC are factors of timing and the effect of HTIP. As regards the timing issue, it is obvious that Yangpu learned from the former success stories of the district governments of ZGC. Yangpu was discriminated against in Shanghai's ambitious Pudong project before 2000. Thanks to the institutional reform in the 1990s that gave district governments the power to develop their local economies, the Yangpu district government was able to utilize the HTIP banner to develop the local economy. This was very different from ZGC where the city and central states had supported its development at the initial stage.

Secondly, with regard to the social and economic effects, the development of ZGC combined technological innovation more fully with the booming of the real estate sector than did the development of Yangpu. ZGC's development has been an evolutionary process through which various district governments in Beijing have been able to learn from the successful economic growth of the Haidian district by way of

establishing an HTIP. Nevertheless, while the Haidian district has been a dynamic region in terms of technological innovation (Zhou, 2005, 2008), the followers have not necessarily been able to perform the same level of technological development. For example, in 2007, the revenues of the IC design and software industries in ZGC contributed about one third of the income of these two sectors in China (ZGCAO: 13-14); in addition, in the past five years, the number of patents granted to ZGC constituted about 20% of the whole country, in which Haidian district had almost 61% of all zones of ZGC[17]. Indeed, compared to ZGC's excellent performance, the Yangpu case is simply an example of a district government intending to develop the local economy by using the HTIP label. Until recently, the development of the real estate sector has been much more successful than that of technological innovation. Most of the technological development in Shanghai has still been concentrated in Zhangjiang as opposed to in Yangpu, in which Wujiaochang KIC has looked more like a property-led project than a real innovation center.

Currently, the HTIP label is an attractive commodity and a label that can be sold. An interesting development in China now is that the ZGC label has been extended beyond the territory of Beijing city. Currently, the ZGC administrative office has worked with the Hebei and Liaoning provincial and Tianjin city governments to create more ZGC zones in those places in order to generate economic value based on the label and to enhance technological development in those places[18]. ZGC as China's Silicon Valley has now become a symbol in campaigning for economic development all over the country. Shanghai's district governments have also established their affiliated HTIPs in other provinces to promote economic development. The HTIP label has become a fictive commodity that can be sold and extended to the rest of China to lure district governments to join the high-tech-led development game.

However, there are dim sides of the dazzling HTIP phenomenon. First, the booming of the real estate market has created an environment in which it is difficult for SMEs to survive. This is because the district governments have been more

[17] Beijing News, 2011-08-15, adapted from http://big5.xinhuanet.com/gate/big5/www.bj.xinhuanet.com/2011-08/15/content_23459532.htm

[18] Data adapted from http://report.qianlong.com/33378/2011/03/05/1060@6694853.htm, accessed on March 5, 2011.

interested in luring MNCs or big companies' headquarters to inhabit the zones, and the rents and prices of the land have been escalating so that small venture firms have been forced to escape from the city centers where the universities and R&D institutes are concentrated. This in turn has enhanced the image of the HTIP as creating good business environments rather than constructing innovation milieus. The booming of the real estate sector is similar to other high tech industrial parks in other places of the world, for example Silicon Valley in the U.S. or Hsinchu science park in Taiwan. Nevertheless, whereas in the latter cases, abundant venture capital is available to support the emerging small science firms to survive and even to become technological leaders in the world market, ZGC however lacks of this type of linkage, a type of innovation milieu has still not yet established in China (Zhou, 2008, and see Leng and Wang, forthcoming). Second, the re-settlement of the inhabitants in the planned areas has often created resentment on the part of the local population towards the zones because the district governments' compensation fees were too low for local people to survive. As shown in the Fengtai case, many local people are still living in slums where the lands were planned but have not yet been developed.

Indeed, HTIP has become a branding competition. However, as we have shown, this branding game has been favorable to the property-led development of urbanization. As long as the branding of the HTIP, regardless of whether it is ZGC or the Headquarter Economy, can effectively generate successful economic growth for the local economy, space will be produced and reorganized along with the property-led development approach in China in the foreseeable future.

References

Brenner, N. "Globalization as Reterritorialization: The Re-Scaling of Urban Governance in the European Union." *Urban Studies* 36, 3 (1999): 431-51.

Camagni, R. "Introduction: From Local 'Milieu' to Innovation through Cooperation Networks." In *Innovation Networks: Spatial Perspective*, edited by Roberto Camagni. (London: Belhaven Press, 1991), 1-9.

Castells, M. and P. Hall. *Technopolis of the World: The Making of Twenty-First-Century Industrial Complexes.* London: Routledge, 1994.

Chen, A. J. "Yangpu da zhuangxing" (Great transformation of Yanpu), Yangpu keji yuanqu, No. 1, (November, 2009), 4-7.

Chen, B. Z.,T. Liu, Y. J. Fan, and K. X. Peng, 2006. "Zhili miji diqu renli ziyuan yu chengshi gongneng kongjian de hudong guanxi yanjiu: yi shanghai shi yangpu weili" (Interaction of knowledge intensive human resources and urban space functions: A case study of Yangpu of Shanghai), *Chengshi guihua xuekan*, No. 3 (2006), 9-15.

Chen, Q. and H. Yu. "Shanghai cizhongxin paomo zuida" (The biggest bubble is in the Shanghai sub-urban area), *Fangdichan Shijie*, December, 2005.

Ge, W. "Special Economic Zones and the Opening of the Chinese Economy: Some Lessons for Economic Liberalization". *World Development* 27, no. 7 (1999): 1267-85.

Harvey, D. *The Condition of Postmodernity*. Cambridge: Blackwell, 1989.

He, S. J. and F. Wu. "China's Emerging Neoliberal Urbanism: Perspectives from Urban Redevelopment." *Antipode* 41 (2009), 282-304.

Hsing, Y. T. *Making Capitalism in China: The Taiwan Connection*. New York: Oxford University Press, 1998.

Hsing, Y. T. *The Great Urban Transformation: Politics and Property in China.* New York: Oxford University Press, 2010.

Jessop, B. and N. L. Sum. "An Entrepreneurial City in Action: Hong Kong's Emerging Strategies in and for (Inter) Urban Competition." *Urban Studies* 37, no. 12 (November 2000): 2287-313.

Jessop, B. *The Future of the Capitalist State*. Cambridge: Polity, 2002.

Leng, T. K. and J. H. Wang, "Local States, Institutional Changes, and Innovation Systems: Beijing and Shanghai Compared", forthcoming, *Journal of Contemporary China*, forthcoming , 2012.

Logan, J. R. and H. L. Molotch, *Urban Fortunes: The Political Economy of Place.* Berkeley, Ca: University of California Press, 1987.

Massey, D. *Spatial Divisions of Labor: Social Structures and the Geography of Production.* New York: Methuen, 1984.

Oi, J. C. “Fiscal Reform and the Economic Foundations of Local State Corporatism in China.” *World Politics* 45, no. Oct (1992): 99-126.

Oi, J. C. “The Role of the Local State in China’s Transitional Economy.” *The China Quarterly* 144 no. Dec (1995): 1132-49.

Segal, A. *Digital Dragon: High-Technology Enterprises in China*. Ithaca: Cornell University Press, 2003.

Wan, Y. M. “Shanghai Yangpu daxuecheng tourongzi yunzuo fangshi ji peitao zhengce yanjiu” (Research on the operation of financing the Yangpu University Project), *Jingjishi*, No. 4. 2004.

Wang, J. H. and C. K. Lee. “Global Production Networks and Local Institutional Building: The Development of the Information Technology Industry in Suzhou, China.” *Environment and Planning A* 39, no. 8 (2007): 1873-88.

Wang, R. H., “Zhonglun: Sanqu liandong yu yangpu jingyan” (Introduction: Tri-party interaction and the experiences of Yangpu), in Ronghua Wang, *Shanghai yangpuqu chanye fazhan yu minsheng wenti diaoyan baogao*, (Shanghai: Shanghai Academy of Social Sciences, 2008), 1-40.

Wang, S., Y. Wu, and Y. Li. “Development of Technopoles in China.” *Asia Pacific Viewpoint* 39, no. 3 (1998): 281-301.

Wang, S. H. and Y. L. Tian. “Yi daxue wei yituo de changyi chengshi guanli jiqi caozuo moshi tantao” (Research on the creative city management based on universities), *Zhongguo Wujia*, 4 (2008): 53-55.

Wu, F. L. “Regional Development in China: States, Globalization, and Inequality.” *Progress in Human Geography* 26 (2002):430-431.

Wu, W. P. “Cultivating Research Universities and Industrial Linkages in China: The Case of Shanghai.” *World Development* 35, no. 6 (2007): 1075–93.

Yangpu District government, *Shanghaishi daxue xiaoqu kejiyuanqu gonggong shequ san qu ronghe liandong fazhan yanjiu.* (Interactive development of campuses, research parks, and public community in Shanghai), Yangpu District government, 2009.

ZGCAO (Zhongguancun Administrative Office). *Annual Report of ZGC.* Beijing. 2008 and various years.

Zhang, H. Y. “Zhengfu zai fangdichan shichang shangdi cuowei yu shiwei (Readjustment of the state in the real estate market), *Zhongguo fangdichan pinglun*, No.3, (2005), 22-31.

Zheng, G. *Kaifaqu fazhan yu chengshi kongjian chonggou.* (*The Development of Economic Zones and the Restructuring of Urban Space*), Beijing: China’s Architectural Industry Press, 2010.

Zhou, Y. *The Inside Story of China’s High-Tech Industry: Making Silicon Valley in Beijing.* Lanham, Md.: Rowman & Littlefield Pub. 2008.

Zhou, Y. “The Making of an Innovative Region from a Centrally Planned Economy: Institutional Evolution in Zhongguancun Science Park in Beijing.” *Environment and Planning A* 37 (2005): 1113 - 34.

Zhou, Y. and X. Tong. “An Innovative Region in China: Interaction between Multinational Corporations and Local Firms in a High-Tech Cluster in Beijing.” *Economic Geography* 79, no. 2 (2003): 129-52.

Zweig, David. *Internationalizing China: Domestic Interests and Global Linkage*. Ithaca, NY: Cornell University Press, 2002.