

Reaching the sea: Guangzhou southern expansion from rural industrialization to polarized strategical planning

*Original*

Reaching the sea: Guangzhou southern expansion from rural industrialization to polarized strategical planning / Bruno, Edoardo. - ELETTRONICO. - (2015). (Intervento presentato al convegno VIII INTERNATIONAL PHD SEMINAR 'URBANISM & URBANIZATION' - SYMPOSIUM LATSIS EPFL 2015 tenutosi a Losanna nel 14-15/10/2015).

*Availability:*

This version is available at: 11583/2670418 since: 2017-06-06T12:23:48Z

*Publisher:*

UU2015

*Published*

DOI:

*Terms of use:*

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

*Publisher copyright*

(Article begins on next page)

## THE HORIZONTAL METROPOLIS: A RADICAL PROJECT

VIII INTERNATIONAL PHD SEMINAR 'URBANISM &amp; URBANIZATION' | SYMPOSIUM LATSIS EPFL 2015



LAUSANNE | 12, 13, 14 OCTOBER 2015

Conference Proceedings

# THE HORIZONTAL METROPOLIS: A RADICAL PROJECT

VIII INTERNATIONAL PHD SEMINAR 'URBANISM & URBANIZATION' | SYMPOSIUM LATSIS EPFL 2015

© UU2015

**ISBN** 978-2-8399-1747-6

<http://lab-u.epfl.ch>

## EDITORS

Martina Barcelloni, EPFL Lausanne  
Chiara Cavalieri, EPFL Lausanne

## SCIENTIFIC COMMITTEE

Paola Viganò, EPFL, Università IUAV, Venezia (chair)  
Cristina Bianchetti, Politecnico Torino  
Stephen Cairns, Future Cities Lab, Singapore  
Elena Cogato Lanza, EPFL  
Michiel Dehaene, U-Gent  
Bruno de Meulder, KU Leuven  
Alberto Ferlenga, Doctorate School, Università IUAV, Venezia  
Vincent Kaufmann, EDAR, EPFL  
Sébastien Marot, Paris Marne-la-Vallée  
Brian McGrath, Parsons The New School for Design  
Han Meyer, TU Delft  
Dominique Rouillard, ENSA Paris-Malaquais  
Joaquim Sabaté, UPC Barcelona  
Saskia Sassen, Columbia University  
Kelly Shannon, University of Southern California  
Charles Waldheim, GSD Harvard

## ORGANIZING COMMITTEE

Farzaneh Bahrami  
Martina Barcelloni Corte  
Chiara Cavalieri  
Marine Durand  
Valérie Pahud  
Roberto Segà  
Matthew Skjonsberg

## CONTACT

uu2015@epfl.ch  
EPFL, ENAC, IA, LAB-U  
Station 16  
CH-1015 Lausanne



# Reaching the sea: Guangzhou southern expansion from rural industrialization to polarized strategical planning

Bruno Edoardo

Polytechnic of Turin

Prof. Michele Bonino, Prof.ssa Francesca Frassoldati

Expected thesis defence: January 2017

*edoardo.bruno@polito.it*

At the turning point of the new century Chinese urban growth has arrived to a new challenge: the improvement of its urban space after the astonishing development of the late Eighties and Nineties. At that time many scholars, impressed by the great urban sprawl occurring in China and other Asian regions, tried to conceptualize models in order to explain that particular phenomenon of the peri-urban dispersion. The paper wants to explore, selecting the city of Guangzhou as case study, capitol of Guangdong Province, which are the most influential passages that could demonstrate how much policy has influenced the management of the urban spatial growth. Analysing a system of driving forces, derived from the market but managed by the political system, and comparing them with the mapping of the city growth in a temporal dynamic selection, it's possible to understand that South China cities had to change their planning from agglomeration to strategical organization in order to survive. In this way Guangzhou has achieved the possibility to redefine its leading role inside the Pearl River Metropolis, improving urban space from dispersion to a multi-polar and specialized system.

## Introduction

The Chinese urban growth has become in the last thirty years a more and more fundamental field of research for many scholars coming from various discipline concerning urban issues. Its fast acceleration, the huge amount of land converted from rural to urban purposes, completely changed the “scape” of the Chinese city environment.

The Chinese population reached at the end of 2014 the number of 1,36 billion people, which 54,77% of them are living in areas that administratively could be defined ‘urban’ (NBSC)<sup>1</sup>. The 1982 Census conducted by the Central Government showed a total different country, where only 25,8% of the people where living into urban context (CSY 1996). These data explains the rapid change in demographic composition that occurred in China since Deng Xiaping ‘open-door’ policies, changing the socialistic Maoist State into ‘capitalism with Chinese characteristic’ (Wu 2007a).

The last three decades population growth, despite maintaining the rigid hukou system that control internal flows (Miller 2012), describes a total new type of country with urban areas generated by a great expansion, creating on one side an extraordinary economic double digit GDP growth but on the other social (Guldin 2001) and environment diseases (Ren 2013).

Certainly the conversion of the land-use is the most physical effect that attracted scholar attention, regarding the progressive erosion of the rural areas by new construction activities (Yeh, Wu 1996), debating which are the main driving-forces that carried on the transformation (Wu 2007b) and which are the best morphological concepts that could explain the new territorial transaction (McGee 1991).

Since the end of the Seventies China has based its economy under two distinctive policy strategies fully controlled by the Central Government: financing industrial key-project for the whole country, as much as possible far away from the border and coastal areas, and maintaining immutable urban areas in order to avoid expensive welfare intervention not sustainable for the socialistic state (Lin 1997). This means that the pre-reform Chinese country could be defined based on a low urbanized level.

The economic reforms announced by Deng Xiaoping in 1978, were promulgated in order to contrast a long decade of stagnation and incorporate market principles inside Chinese planned economy (Harvey, 2005). Deng focused on ‘four modernizations’: science and defence, industry, education, and agriculture. Seems absurd that ‘cities’ didn’t compare among the path of the reform, but this could be explained with the idea that cities in the history of PRC, has always represented an hard difficulty to be centrally controlled (Walder 2015). At the same time the ‘open-door’ policies has to be interpret as planned and progressive injection, where the location choice was a primary principle, in order to maintain caution and strong resistance to capitalist ideology (Wong, Tang 2005).

In 1980 were established in South China four Special Economic Zones (Shenzhen, Zhuhai and Shantou in Guangdong Province, and Xiamen in Fujian Province) allowing them to move ‘one-step ahead’ the nation and develop a market economy taking advantage of the proximity with Hong Kong and Macao investors (Vogel, 1990). Deng reborn the traditional glorious past in trade market of a region historically known as the ‘South gateway of China’, and trusted on the Foreign Direct Investement (FDI) that could be absorbed

---

<sup>1</sup> For a comprehensive view of the Chinese Administration System, where urban and rural are not merely designed by the population number but by the Party Organization at the local level, refers to Frassoldati (2008).

from the Hong Kong and Macao colonies, that have maintained strong relationships with many overseas Chinese during the Maoist era.

Together with foreign investment and Special Economic Zones introduction, the other element was the establishment of the rural reforms at first. The idea derived from the progressive abandon of the People's Communes under the central planning, with the introduction of the decentralised Household Production Responsibility System (HPRS) in the early 1980 (Kung 1995) and Land Shareholding Cooperatives (LSCs) in the 1990s (Fu, Davis 1998). The shifting from the communes and brigade systems to a medium size ownership, not transferable and based on rents and subcontracted labourers, substantially brought competitiveness and profit oriented behaviour among areas before less improved. If on one site agriculture passed to a progressive mechanization phase, on the other size the openness towards foreign investments, the cheap labour and land cost, created a phenomenon of rural industrialization, describing the emergence of non-rural activities into the countryside, with less developed and export oriented industrial entities that absorbed the rural surplus labour force.

This kind of activities, called Township and Village Enterprises (TVEs), that progressive replaced the State Owned Activities (SOAs), is the key-factor to understand the pattern transformation around urban agglomeration in Eighties and first Nineties Chinese cities.

The morphological concept of the 'desakota' system, exposed by the urban researcher Terry McGee in 1991, in order to describe the spatial changes occurring in different Asian region under fast industrial and economical development, found a systemic redefinition of the peri-urban interface. The model, that seemed to be adaptive also to explain the South China rural transition, allocated a new dynamic area in which occurred a mix of social and industrial activities with different upgrades in infrastructures. It's important to underline that inside the volume "The Extended Metropolis: Settlement Transition in Asia" edited by Norton Ginzburg, Bruce Koppel and Terry McGee, the Chinese authors invited to give their personal perspective on their context, were in difficulties to describe and conceptualize the agglomeration gradients in quantities, and were more concerning about interlocking relationship between urban sprawl and local administration boundaries [fig.1], population distribution or employment and rural industrialization.



[fig.1] The Hong Kong-Guangzhou-Macao metropolitan interlocking region with population graph (left) and administrative division in the 1991 (right).

Source: Zhou, Y. (1991)

This means to underline that the basement for Chinese metropolitan development was first of all a political, economical and social driven phenomenon than a planned and morphological spatial agglomeration.

The success of the South China experience, overturning the underdevelopment imposed by the Maoist era, encouraged the Central Government to pursue the increase of the number of the Economical Development Zones around China, and in particular creating in Guangdong in 1994 the Pearl River Delta Economic Region, shifting the governance issues from the city to the province level (Sanjuan, 2008).

Between 1990 and 2010 the population in Pearl River Delta (therefore named PRD) passed from 6,4 million to 47 million of people<sup>2</sup> generating a new uninterrupted rural-urban Metropolis<sup>3</sup>.

<sup>2</sup>The data showed in "tab.2" doesn't take into consideration the number of people of the two cities of Dongguan and Zhongshan in 1990, lacking inside the official statistics.

<sup>3</sup>It's necessary to take into account that the population census data reported into each Chinese urban Statistics, refer only to "registered" individuals and don't consider the sizable number of "floating people" that escape the hukou system.

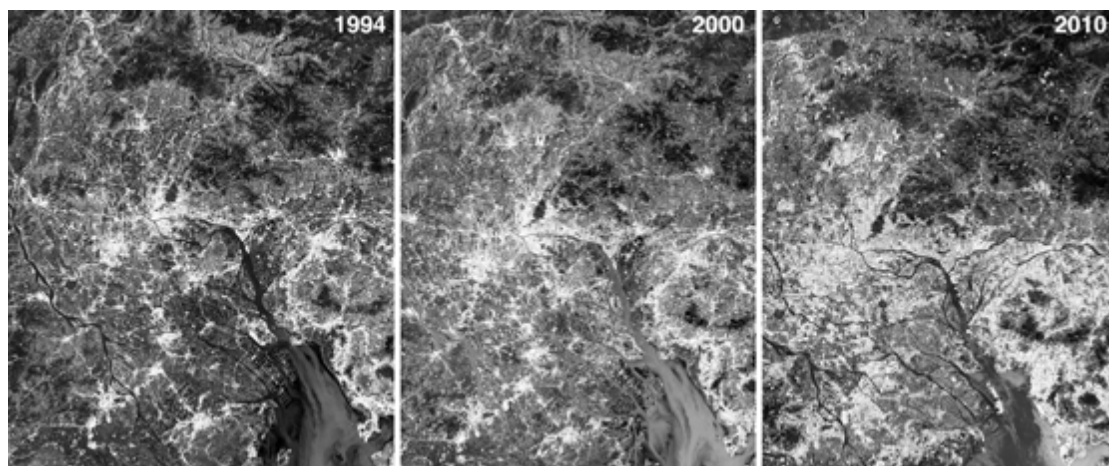
The World Bank has recently recognize the Pearl River Delta Metropolis as the most populated on Earth, surpassing Tokyo Metropolitan Area (World Bank 2015), but meanwhile the built-up area has surpassed the local administration boundaries, divisions are fully maintained.

This paper wants to explore the political and economical role of Guangzhou, the capital of Guangdong Province and one of the key-city of the PRD, that used its spatial management in order to confirm its leading role among the cities composing the vast PRD Metropolis. Thanks to this specific case study will be possible to understand that the sprawl in this area was not caused by a simple repetitive ‘core-periphery’ agglomeration, but by specific shifts in political and economical framework.

### Pearl River Delta and competitiveness

In order to understand that spatial management has become more and more essential in the PRD region, it's fundamental to observe the LandSat images accentuating the built-up area of the region between 1994, 2001 and 2010 [Fig.2], obtained with ESA LEOWorks software and based on the Normalized Difference Built-up Index (NDBI) formula (Xu 2007).

The growth phase in PRD during the Nineties could be defined “shocking” considering any socio-economical proxy as population, GDP or FDI [tab 1].



[fig.2] Pearl River Delta landsat images processed by Normalized Difference Built-up Index for the years 1994, 2000 and 2010.

Source: elaborated by the author.

	PRD - 1985	PRD - 2003	% of China - 1985	% of China - 2003
Population (million)	1.76	23.99	1.7	1.9
GDP (billion yuan)	41.8	1134.1	4.9	9.7
Investment in fixed assets (billion yuan)	1.7	374	0.7	6.7
Exports (US\$ billion)	0.6	145.1	22.8	33.1
FDI (US\$ billion)	0.1	17	6.1	31.8

[tab.1] Main indicators in PRD economical growth between 1985-2003. Source: Lu et al. 2007

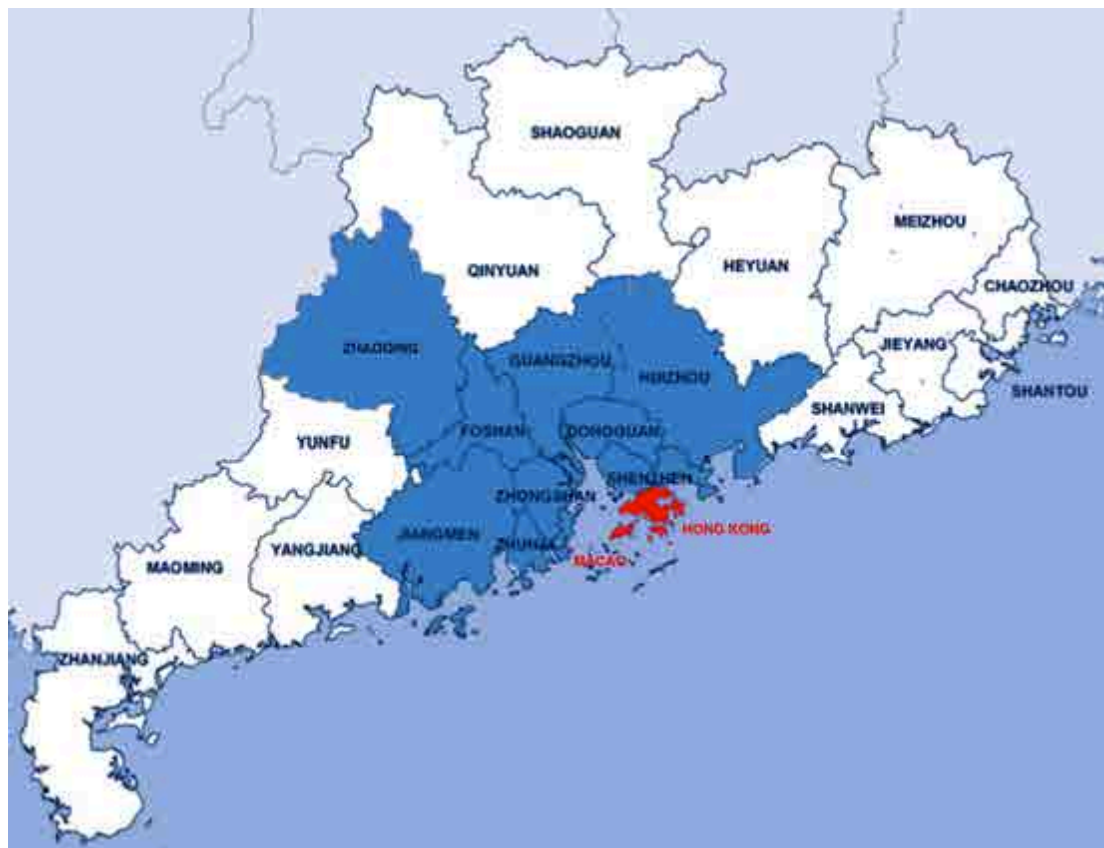
But what it's really important is the actual spatial management necessity of an unpredictable metropolitan area that, until now, has no official recognizable in the Chinese Administrative system. The key-point is to understand what kind of Megalopolis it is, despite any possible spatial prefiguration.

What is namely defined Pearl River Delta Area by many scholars, had different meaning, historical reasons and geographical location. Its boundaries were blurred depending the convenience political relationship between the main actors (Lin 1997). Now PRD it's internationally conceived as a 9+2 economic region (OECD) that resembled nine cities (two of them are SEZs), Jiangmen, Zhongshan, Foshan, Zhaoqing, Guangzhou, Dongguan, Huizhou, Zhuhai and Shenzhen, plus the two Special Administrative Region of Hong Kong and Macao [fig. 3].

Thanks to the control of the most important political and economical passages, it's possible to recap the phases that describe the formation of the PRD Metropolis and it's spatial development.

After the introduction of the 1978 reforms, Guangdong hosted two of the four Special Economical Zones indicated by the Central Government for testing the openness to the market. Geographically they were set up in proximity to Macao and Hong Kong in order to perceived the amount of the Foreign Direct Investment that could be driven into Mainland. They were areas of greater autonomy included finance and fiscal matters, foreign trade and investment, commerce and distribution, allocation of materials and resources, labour, and prices. Only after 1988 Guangdong Province was designated to host a “comprehensive economic reform area”, establishing for example a Stock Exchange in Shenzhen for boosting the penetration of external investment inside the Mainland China, and giving the municipalities the possibility to improve their industrial export-oriented market.

The progressive passage from State Owned Enterprises (SOEs) of the late Maoist Era to the Town and Village Enterprises (TVEs) that characterized the Eighties, detecting the policy of “leaving the land but not the villages, entering the factories but not the cities”, absorbed the surplus of the rural labour and didn't radically affected urban cores. TVEs were at that time the most important economical actors in China and reproduced what was expressed in the National Planning Law of the 1989 “controlling the big cities, moderating development of medium-size cities, encouraging growth of small cities” (Kamal-Chaoui et al 2009).



[fig.3] The Pearl River Delta 9+2 concept collocation and administrative division inside Guangdong Province.  
Source: elaborated by the author starting from OECD 2008.

This phase that characterized the Eighties first urban improvement, was not a real urban sprawl, but a more focused urbanization of the rural areas, thanks to a mixture of reform and foreign capital penetration. PRD Metropolis started from its rural landscape and not as a peri-urban phenomenon that expanded the old city canthers, driven by step by step free trade rules that forced the market flows.

What happened during the Nineties, and recognizable in the comparison of the Landsat image processed, was a completely different phase, seeing the local municipality as the main character of what we can call as a ‘real estate fever’. The promulgation in 1979, and last revised in 1986, of the “Law of the Local Peoples Congresses and Local's People Governments”, despite its content didn't define a precise functional responsibilities for local governments, it's fundamental to understand the progressive devolution to local authorities: after the reform they could discipline autonomously fiscal revenues and state-owned land long-term rentals. The possibility at the local level to dispose huge amount of land and keep the surplus from



the local fiscal system (Peterson, Annez 2007), with the stronger investing relationship with Hong Kong and Macao (Cheung 2012), let the PRD to improve during the Nineties its spatial pattern, investing in important infrastructures, services, real estate building construction and industrial parks (Wuttke 2011). In this way we can observe that the main driving force of the strong urbanization in PRD was due to a combination of decentralization of the central power to local sphere, progressive marketization and capability to intercept foreign capitals (Eng 1997) presenting a more and more improved marketplace.

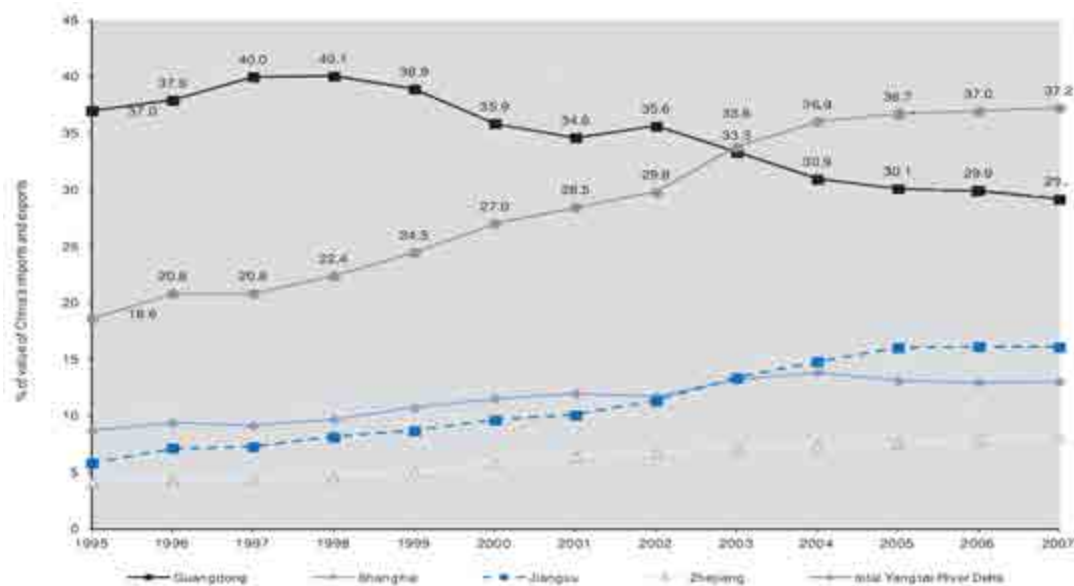
At the beginning of the new century the market competition inside PRD reached a so high level that ere necessary new political instrument. Local authorities promoted new cooperation agreements in order to improve their collaboration over the administration boundaries of the cities composing PRD.

The signature in 2003 of the two Closer Economic Partnership Arrangement (CEPA) both with Hong Kong and Macau (Cheung 2015), the formal establishment in 2004 of the Pearl River Economic Region and the Plan for the Reform and Development of the PRD, 2008-2020 (the Outline Plan) in 2008, seems arriving late after a 12.1% GDP growth rate between 1980 and 2008 inside the 9+2 PRD formula.

The reason has to be seen in the double faced economical and political framework of the PRD: maintain the inner competition between the local municipalities, focus on municipality economical success for higher careers to local politicians (Zhu 2004), and not lose the competition against the Yantze River Delta Economic Zone (therefore named YRD).

The rise of the YRD led by the Municipality of Shanghai, the second city in China after Beijing, it's undermining the PRD Metropolis economic role inside China, bringing the competitiveness concept to a national stage. The economical surpass occurred around 2003 [fig.4], symbolizes that the testing phase of the Eithies and Nineties has finished, pushing all the coastal side of China to improve their global demand attractiveness. PRD, and Guangzhou itself, have to find their position in this new geopolitical panorama, and manage the future urban expansion.

Thanks to this holistic perspective, pointing out the main political passages occurred in the regional context, we can observe that opening to the market, inserting competition logics at local administration level, means to rapidly improve the urban space and create a totally new landscape. The driving forces of the transformation thus appear in a multiscale perspective, local/national/global, and the urban-rural space dichotomy is not fully useful for explaining where transformation will occur.



[fig.4] Change of Share in China's External Trade 1995-2007. Source: OECD 2008.

### Guangzhou as selected case study: repositioning through polarization

The city of Guangzhou has a long history of more than 2100 years. Many of its nicknames, the Flower City, the Goat City and the Rice-ear City, admit its ancient origins (Xu, Yeh 2003).

It's geographical strategical position, just between the Bayun Mountain on the North Side and the end of the Pearl River Delta on the South part, gave it during the century the possibility to develop overseas trade and become the southern gate to Chinese market. Its long trading tradition, especially well known for the silk export, gave it great economical power in what before was called Lignan Province (Marks 2004). The

intense relationships with the Western countries during the centuries, despite the Opium War crash, reinforced the idea of Guangzhou (Canton in the French pronunciation) as a fundamental harbour in East Asia market.

This brief historical background is useful to explain the base upon which Guangzhou is continuing to develop its role inside the Pearl River Delta Metropolis. Its central position, its fundamental political role in South China and its trading tradition with foreigner investors, are still the main concept on which Guangzhou has worked since the reform era.

Observing the growth rate index of the population inside the PRD cities between 1990-2010 [tab.2], it's possible to underline two distinctive phases. The first reveals the urgent growth happened almost everywhere in the PRD, meanwhile during the second period 2000-2010 the value felt down almost in every city (exemplar is the case of Foshan passing from 1143% to 34,78%). Guangzhou has experimented a continuous and better balanced growth in the last 2 decades, but at the same time just after year 2000 the urban panorama in PRD was completely changed. This meant that despite its strong and historical political role, has to face many different new competitors working in the same market area (Cheung 2015).

	1990 Population	2000 Population	2010 Population	1990-2000 growth index	2000-2010 growth index
Guangzhou	3.918.010	8.524.826	11.071.424	117,58	29,87
Shenzhen	875.176	7.008.831	10.358.381	700,85	47,79
Dongguan	-	6.445.777	8.220.207	-	27,53
Foshan	429.410	5.337.709	7.194.311	1143,03	34,78
Zhongshan	-	2.363.322	3.121.275	-	32,07
Huizhou	274.689	1.454.508	2.344.634	429,51	61,20
Jiangmen	284.935	1.468.742	1.822.614	415,47	24,09
Zhuhai	331.065	1.235.437	1.562.530	273,17	26,48
Zhaoqing	348.857	1.132.959	1.397.152	224,76	23,32

[tab.2] Population growth in PRD divided by cities in 1990, 2000, 2010. Source: National Bureau of Statistics, China and Statistics Bureau of Guangdong Province.

The Stock Exchange Market present in Shenzhen and the powerful Hong Kong harbour, were some of the elements that in 2000 put to the corner one of the region milestone disappearing among a totally new metropolitan entity.

All the cities inside PRD had experienced an exceptional urban growth thanks to the huge cheap land disposal that could be rapidly converted, given to developers and return to the local government public fund. The political and economical reforms of the Eighties had hard physical consequences that has to face their sustainability, and at the turning point of the century seemed to be necessary for Guangzhou to restart directly from a new vision for its urban space (Wu 2007c).

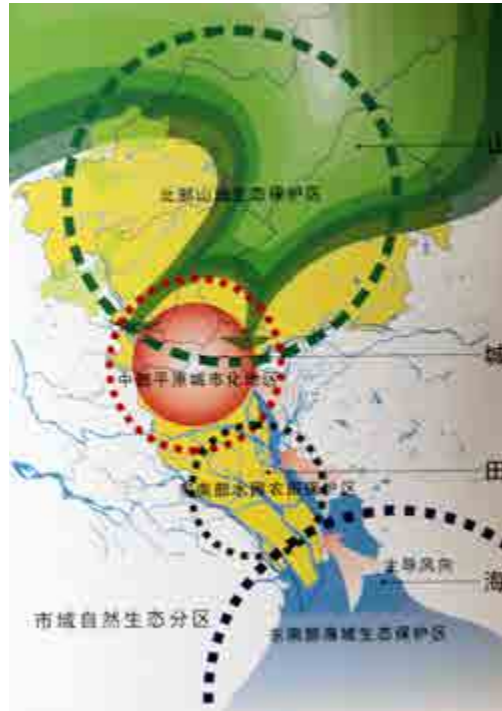
A survey conducted in 1997 (Xu, Yeh 2005) showed that almost 73% of the residents where dissatisfied about Guangzhou's built environment: traffic jams, air pollution and low quality of crowded areas were the consequences of the rapid growth carried on by the real estate fever, without a robust planning supervision and strategical regional vision.

The Party Secretary of Guangzhou, Lin Shusen, said "it is a really risky time for Guangzhou: since the city has long been proud of being the central city for more than two thousand years; if this status disappeared, Guangzhou would be doomed eternally" (Guangzhou Daily, 2002).

The shift to a strategical development plans occurred in China at the beginning of the new century and the city of Guangzhou was the first to start a process in order to adopt one. In 2000 the Guangzhou Urban Planning Bureau invited five planning design institutes<sup>4</sup> to submit a big for the Guangzhou Urban Strategic Development Plan.

Without any specification for what the plan in the future will have formally managed in the planning regulatory, the five proposals were independently submitted and after evaluated by the Guangzhou Municipal Government and other invited experts.

<sup>4</sup> Including the Chinese Academy of Urban Planning and Design, the Institute of Urban Planning and Design of Qinghua University, the School of Architecture and Urban Planning of Tongji University, the Centre of Urban and Regional Research of Zhongshan University, and the Guangzhou Academy of Urban Planning, Survey and Design. Cfr. Wu (2007) p. 384.



[fig.5] Concept for the strategic plan of Guangzhou. Source: Studies on strategies planning for Guangzhou city (2002).

The strategy coming out proposed a spatial restructuring [fig.5] with the advise of “advancement in the east, linkage in the west, optimization in the north, expansion in the south” (Lu & McCarthy 2008).

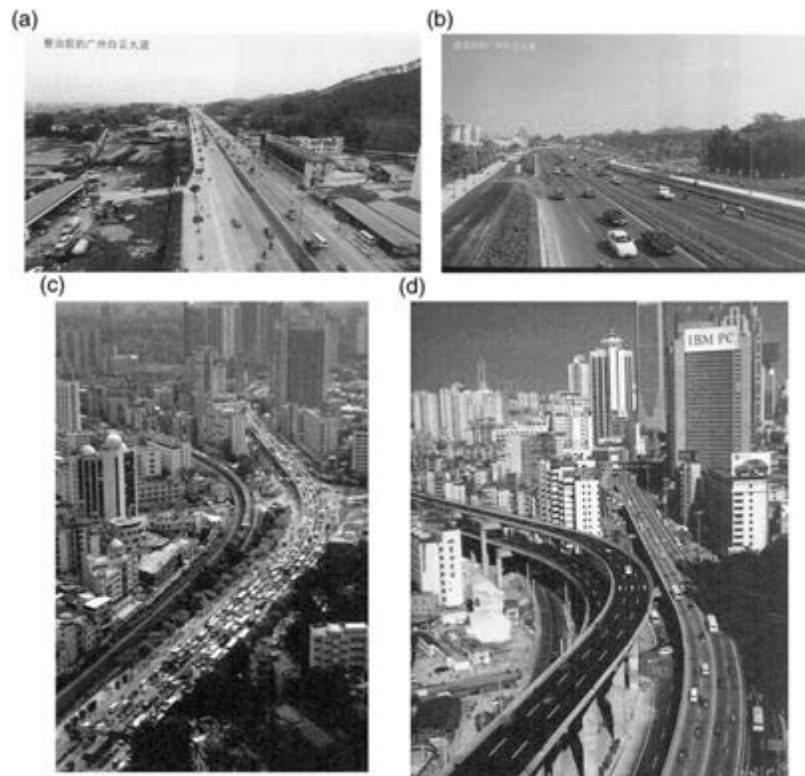
A spatial organization based on precise geopolitical targets. The emergent idea was to re-declare the central role of the city inside PRD, expressing its geographical position as the key-value from which rethink a more balanced future development of the city. Advancement in the east promoted the historical transition from the old city centre along the river in order to relocate industrial and commercial areas until the crossbreeding with the nearby city of Dongguan. One example of this strategy was the empowerment and reorganization of the role of the Guangzhou Economical Development Zone (Wong, Tang 2005) creating a dedicated industrial district. The linkage with the west was pointed out in order to recognize morphologically the two city of Guangzhou and Foshan as a double-core unit, that we can call ‘GuangFo’ (OECD 2008). The optimization in the north regarded the idea to manage the big green belt represented by the Bayun Mountain, with its big pure waters reserves, that could counterweight the large built-up areas of the metropolis. But what it’s central for the discussion, it’s the last strategical concept of the South expansion, where are localized most of the available land and where the city of Guangzhou could symbolically connect the “mountain with the sea” (Wang 2002). In reality by this way Guangzhou wanted to escape from isolation and face directly to the intercontinental ocean trades.

A necessary passage to interpret the application of the plan is the enlargement by Guangzhou Municipality of its boundaries occurred in 2000, absorbing two county level district, Huadu in the North side and Panyu in the South, and transforming them into urban district under the direct control of the local government.

Beside the strategical position of the two urban district, and especially the remote area of Nansha in Panyu district for the control of the East-West infrastructure (Lin 1999), it’s important to remember that the creation of new possible expansion areas it’s not only a morphological balance and management, but means to have the possibility to control in the future an important market asset represented by a low land-use development.

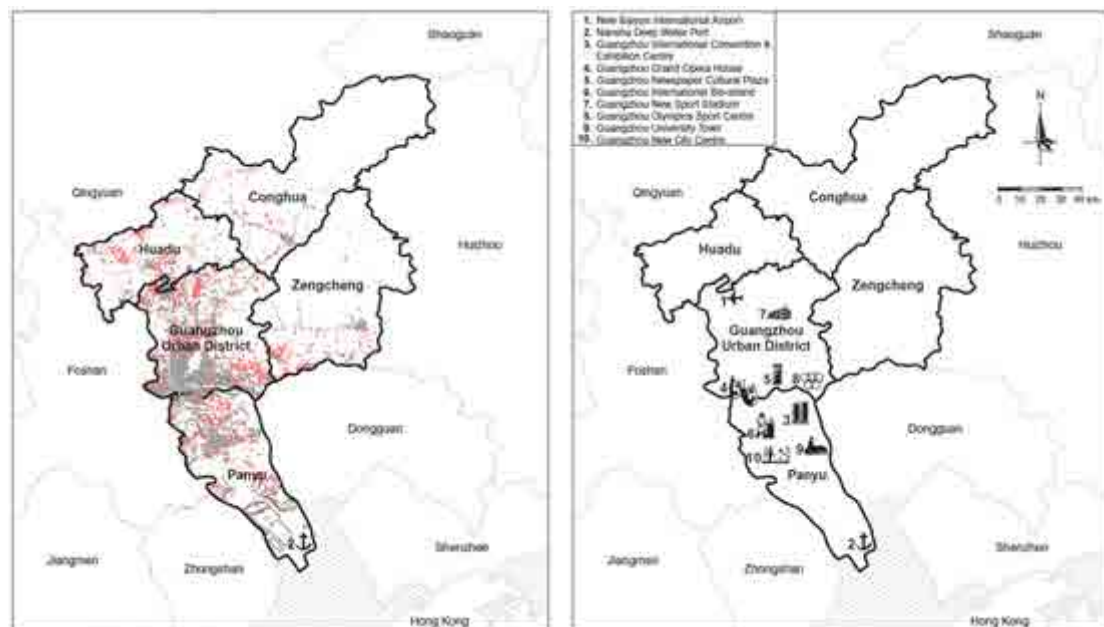
The realization of the plan followed the slogan “minor change in a year, medium change in three and major change in 2010”. The first two phases brought the Municipal Government to invest more that US\$ 7.25 billion between 1999 and 2002, working for key project inside the city, networking improvement and elimination of illegal construction. The results were the receiving in 2002 of the “United Nations’ Best Improvement of Human Settlement” Award and the complete overturning of the 1997 poll, with 96% of the people satisfied by the new urban improvement.

It’s important to consider that fixed assets investments in infrastructure was also an important Chinese answer to the 1997 Asian financial crisis, where public intervention was used in order to improve both internal labour demand both remodelling the disaggregate urban space [fig.6].



[fig.6] Changing landscape due to Guangzhou urban development strategy: (a) Bayun Road before (a) and after (b) change. Hunan road before (c) and after (d) change. Source: Xu, Yeh 2003.

The third long phase of the program has to be connected with the possibility for Guangzhou to host the 2010 Asian Games (Shin 2014). The promotion of key-project, also spanning out the merely sport activities, was the excuse for the Municipal Government to renegotiate its position inside the PRD thanks to its political connection with Beijing and, collecting great financial support, restructure its urban spatial management.



[fig.7] Distribution of built land in 2000 (grey) and in 2010 (red) derived from Puma World Bank Project (left) and location of the main infrastructure project in Guangzhou city since year 2000 (right). Source: elaborated by the author starting from Puma Project Data (<http://puma.worldbank.org>) and Xu, Yeh 2005.

Project like the Bayun International Airport, the University Town or the International Convention and Exhibition Center, demonstrate not only the shift for a new balanced development, but also the creation step by step of a multipolar city, where the big mono-functions areas are connected by important infrastructures projects.

Observing the image showing the urban growth of Guangzhou between 2000 and 2010, derived from the focus made by the World Bank Project Puma<sup>5</sup>, and comparing it with the location of the key-project of the strategical plan [fig. 7], it's possible to recognize the attempt by Guangzhou Local Government to connect and rationalize the space, densify areas around important infrastructures or key-project and manage the urban sprawl reducing dispersion.

This last phase demonstrate how the Eighties and Nineties spatial growth was completely unsustainable in the new competitive challenges of the new century. Connecting dispersed and low improved areas could not be successful in a long-term vision in the PRD context. This is an answer to the possibility that “desakota” concept could be useful for explaining the specific marketization initial phase of the Chinese cities, but not be responsive in a long-term sustainable political vision.

### **Enhancing a polycentric planning: Nansha New City**

At the end of the Pearl River Delta, facing directly to the sea, in the southern part of the District of Panyu, there is Nansha, a territory historically depending on the relationship established between land and water.

Although the Delta landscape has to face with its flooding dilemma, it didn't stop in the past the constitution of many communes and brigades working for land reclamation in this “Siberia of Panyu” (Fok 2006). ‘Fragile environment’ is one of the key value for better understanding Nansha district, but its position in the Delta brought the State Council to designated it in 1993 as an Economical and Technological Development Zone and upgraded in 1996 to establish a national Trial Supporting Base and High-Tech Industrialization, gaining popularity despite it's remote location (Ho 2006).

In 1997 was allowed to host a deep-water port, thinking about the possibility to undermine the competitive scheme of the intercontinental hub exchange inside the PRD (Hou, Li 2011).

What is really interesting is that the site for the deep-water port was not best one due to the sedimentation of the sandy material coming from the Pearl River. Otherwise the expected revenues of this port, with great expanding possibilities, that could overturn in the future the role of the Shenzhen or Hong Kong hub containers, could be so high that the site expensive could be easily covered in the future<sup>6</sup>.

Despite an ecological perspective<sup>7</sup>, Nansha grew its GDP between 2001 and 2011 at an average rate of 28%, higher than the average result of 17,8% in the total area of Guangzhou.

In September 2012 the Chinese Central Government upgraded the district among the national strategic projects, mapping out a new blueprint for the Nansha New Area of Guangzhou (Yu 2015). The project appears essential for the entire economical stability of the Delta, and so became fundamental in the Party vision putting Guangzhou facing directly to the sea and connecting its productivity to the global demand.

While Nansha was elevated to a state-level area of interest, in 2012 the Nansha Planning Bureau has launched its strategical plan for 2012-2025. The observation of the maps [Fig. 8], despite representing only future logic opportunities, shows the construction of a completely new urban entity, following more the model of the Chinese New Town and bringing Guangzhou spatial management from dispersion to a fully planned polarization inside its boundaries.

Nansha New City will supply all the necessary infrastructure and services of a modern city: welfare, education, industrial parks, agriculture, residential areas, and port infrastructure. The new zoning seems to give to the PRD Metropolis its new economical and political core, outside the old city centres of the local municipalities. The construction of the Nansha New City, around it's port as a new Hong Kong, represent a new stage in the PRD Metropolis spatial development, demonstrating the end phase of the multinucleated process started around 2000 in Guangzhou Municipality.

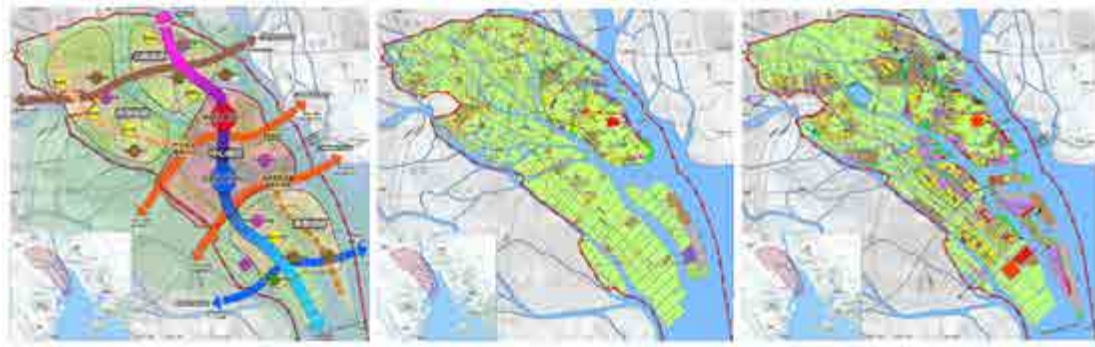
---

5 PUMA, or Platform for Urban Management and Analysis, is developed by the East Asia and Pacific Urban Development and Disaster Risk Management unit of the World Bank's Social, Urban, Rural and Resilience Global Practice (GPSURR) Source: <http://puma.worldbank.org>

<sup>6</sup>The reflection comes from an interview with Professor Shifu Wang from the Department of Urban Planning of South China University of Technology obtained in July 2015. He has spent many years as invited expert in urban planning for the Nansha Planning Committee.

<sup>7</sup> A controversy arose in Guangzhou when the city wanted to develop there a heavy industrial zone, with a 5-billion- dollar refinery, with a joint venture between Sinopec and Kuwait Oil Company (Xu 2015). In 2012 was decided opting for creating a new modern CBD, services, high-tech business and logistics outsourcing, considering the fragile environment of Nansha (Guangzhou Yearbook 2014).





[fig.8] Strategic Concept for Nansha (left) actual situation (center) and project (right). Source: Nansha New Area Master Plan 2012-2025.

Although the proposed urban settlement, in the future there will remain challenges like the relationship with the existing fragile environment and the sustainability with the planned building stock-asset. The phenomenon of the ‘ghost town’ in China (World Bank 2015) or the slower Chinese GDP indexes that are occurring in this 2015 summer, has to be verified in a so remote big project that could hardly transform the southern image of the PRD Metropolis [Fig.9].



[fig. 9] Transformation of the PRD morphology due to Nansha New City Plan. Source: elaborated by the author.

Nansha represent otherwise the idea that, in the name of a progressive marketization based on land values and intercity competitiveness, also the landscape connoted by environment issues could be easily transformed in order to serve the purpose of the big Metropolis<sup>8</sup>.

Taking in example the saturation of the areas today hosting the Bao'an Shenzhen port between 1979 and 2015, seems to underline that the access to intercontinental container transport it's becoming a so hard driving force that industry will not halt in redesign also unlikely locations [Fig.10].



[fig.10] Land use transformation in the area of Bao'an Shenzhen Port selecting years 1979, 1990, 2000 and 2015. Source: Google Earth Digital Landsat Images.

<sup>8</sup> Concept discussed during an interview with Professor Liming Tang of South China University of Technology, chief urban planner at the Guangzhou Urban Planning Bureau from 1992 to 1997.

## Conclusion

A systematic view of the complexes driving forces that has managed the formation of what is internationally called the Pearl River Metropolis, demonstrates that the theorization of a unique urban concept that can keep together three decades of urban growth it's quite an impossible operation. The continuous interchange of the different variables like land value, national/local policies, infra urban competitiveness, foreign investment attractiveness, define different stages and spatial layers inside the city.

Passing from dispersion to saturation and then from polarization to city specialization, it's possible to trace deeper reasons of the spatial transition of the Pearl River Delta, that couldn't be explained just by the contraposition of an urban rural dichotomy and all its possible gradients (Lin 2007).

Tracing the most influential passages that brought for example Guangzhou to expand itself until Nansha district, we can assure that local government planning and institutional modifications are the first driving force into Chinese urban spatial growth, even though the marketization or the renovated social behaviour occurred after the reform era (Ke et al 2009).

Inside PRD Metropolis local urban policies reveals its powers thanks to the peculiar Chinese land ownership system, based more on government interest than powerful private group like in Western Countries. In this vision all the land area is acting simultaneously a global-local role responding to policies and market benefit.

These analyses could affirm another way of observing the Chinese urban spatial management, not focused on the rural-urban or open-close contraposition, but to an equilibrium-based system of analyses, defining stable, unstable or indifferent situations.

In this way the spatial commutation will follow strategies beyond morphology, surpassing the shock against the Metropolis scale, and easily incorporating strategies and historical changes in decision-making as important passages that could strictly redesign gradient agglomeration.

## Bibliography

Cheung, P.T.Y., 2012. The politics of regional cooperation in the Greater Pearl River Delta. *Asia Pacific Viewpoint*, 53, pp.21–37.

Cheung, P.T., 2015. Toward collaborative governance between Hong Kong and Mainland China. *Urban Studies*, 52, pp.1915–1933.

China Statistical Yearbook, 1996. [online] Available at <<http://tongji.cnki.net/overseas/engnavi/NaviDefault.aspx>> [Accessed on 12 August 2015]

Eng, I., 1997. The Rise of Manufacturing Towns: Externally Driven Industrialization and Urban Development in the Pearl River Delta of China. *International Journal of Urban and Regional Research*, 21, pp.554–568.

Frassoldati F. (2008). Nota linguistica e riferimenti generali, *Archivio di Studi Urbani e Regionali*, no. 92, pp. 13-21.

Fok, H.Y.T., 2006. Extraordinary years meet great opportunities pp.53-56.

Fu, C., Davis, J., 1998. Land reform in rural China since the mid-1980s, *Land Reform*, 2, pp.122–137.

Guangzhou Daily, 2002. “Guanyu Guangzhou chengshi jianshe de minyan” [Popular sayings in Guangzhou on urban development]. 5 January.

Guangzhou Yearbook Compiling Committee 2015. *Guangzhou Yearbook 2014*. Guangzhou: Guangzhou Yearbook Press.

Guldin, G.E., 2001. What's a peasant to do?: village becoming town in southern China. Boulder, Colorado: Westview Press.

Ho, M.T., 2006. Nansha of Guangzhou: a Preface to the Plan for Eastern Nansha City. . in A. Berger. *Nansha Coastal City: Landscape and Urbanism in the Pearl River Delta*. Harvard University, Graduate School of Design. pp.59-60.

Hou, Q., Li, S.-M., 2011. Transport infrastructure development and changing spatial accessibility in the Greater Pearl River Delta, China, 1990–2020. *Journal of Transport Geography*, 19, pp.1350–1360.

Kamal-Chaoui, L., Leeman, E., Rufe, Z., 2009. Urban Trends and Policy in China (OECD Regional Development Working Papers No. 2009/01).

Ke, S., Song, Y., He, M., 2009. Determinants of Urban Spatial Scale: Chinese Cities in Transition. *Urban Studies*, 46, pp.2795–2813.

Lin, G.C., 1997. *Red capitalism in South China: growth and development of the Pearl River Delta, Urbanization in Asia*. Vancouver: UBC Press.

Lin, G.C., 1999. Transportation and metropolitan development in China's Pearl River Delta: The experience of Panyu. *Habitat International* 23(2), pp.249–270.

Lin, G.C.S., 2007. Reproducing Spaces of Chinese Urbanisation: New City-based and Land-centred Urban Transformation. *Urban Studies*, 44, pp.1827–1855.

Logan, J.R., 2008. *Urban China in transition: Studies in urban and social change*. Oxford: Blackwell Pub.

Lu, L., Wei, Y.D., 2007. Domesticating globalisation, new economic spaces and regional polarisation in Guangdong Province, China. *Tijdschrift voor Economische en Sociale Geografie*, 98, pp.225–244.

Lu, L., McCarthy, L., 2008. Spatial restructuring in urban China amid globalization and economic reform: the case of Guangzhou. *Built Environment*, 34(4), pp.444–463.

Marks, R., 1997. *Tigers, rice, silk, and silt: environment and economy in late imperial south China, Studies in environment and history*. Cambridge: Cambridge University.

Miller, T., 2012. *China's urban billion: the story behind the biggest migration in human history*. New York: Zed Books.

McGee, T., 1991. *The emergence of desakota regions in Asia: Expanding a hypothesis*. in Ginsberg, N. B., Koppel, B. and McGee, T. G. *The extended metropolis: Settlement transition in Asia*, Honolulu: University of Hawaii Press.

National Bureau of Statistics of China, 2015. *Statistical Communiqué of the People's Republic of China on the 2014 National Economic and Social Development National Bureau of Statistics*. [online] Available at: <[http://www.stats.gov.cn/english/PressRelease/201502/t20150228\\_687439.html](http://www.stats.gov.cn/english/PressRelease/201502/t20150228_687439.html)> [Accessed on 12 August 2015].

Peterson, G.E., Annez, P.C., 2007. Financing cities: fiscal responsibility and urban infrastructure in Brazil, China, India, Poland and South Africa. Washington, DC: World Bank; Sage Publications.

Kung, J.K., 1995. Equal entitlement versus tenure security under a regime of collective property rights: Peasants preference for institutions in post reform Chinese agriculture. *Journal of Comparative Economics*, 21(1), pp.82–111

Ren, X., 2013. *Urban China*. Malden, Massachusetts: Polity Press.

Sanjuan, T., 2008. La sfida della governance: sviluppo locale nel Delta dello Zhujiang, *Archivio di Studi Urbani e Regionali*, 92, pp.41–51.

Shin, H.B., 2014. Urban spatial restructuring, event-led development and scalar politics. *Urban Studies*, 51, pp.2961–2978.

Vogel, E.F., 1990. *One Step Ahead in China: Guangdong under Reform*. Harvard University Press: Cambridge, Massachusetts.

Walder, A.G., 2015. *China Under Mao*. Harvard University Press: Cambridge, Massachusetts.

Wang, M.H., 2002. The practice of concept planning for the city of Guangzhou. *City Planning Review*, 25(3), pp.5–10 (in Chinese).

Wong, S.-W., Tang, B., 2005. Challenges to the sustainability of “development zones”: A case study of Guangzhou Development District, China. *Cities*, 22, pp.303–316.

World Bank, 2015. *East Asia's Changing Urban Landscape: Measuring a Decade of Spatial Growth*. The World Bank.



Wu, F., 2007a. Urban development in post-reform China: state, market, and space. Routledge, Abingdon, Oxon; New York.

Wu, F., 2007b: *China's emerging cities: the making of new urbanism*. Routledge, Abingdon, Oxon: NY.

Wu, F., 2007c. Re-orientation of the city plan: Strategic planning and design competition in China. *Geoforum*, 38, pp.379–392.

Wuttke, C., 2011. From industrial enclaves to prototypes of the modern Chinese city: Development zones in Guangdong. *Local Economy*, 26, pp.363–372.

Xu, H., 2007. Extraction of urban built-up land features from Landsat imagery using a thematicoriented index combination technique. *Photogrammetric Engineering & Remote Sensing*, 73, pp.1381–1391.

Xu, J., Yeh, A.G.-O., 2003. Guangzhou. *Cities*, 20, pp.361–374.

Xu, J., Yeh, A.G.-O., 2005. City repositioning and competitiveness building in regional development: new development strategies in Guangzhou, China. *International Journal of Urban and Regional Research*, 29, pp.283–308.

Xu, J., Yeh, A.G.-O., 2008. Regional Cooperation in the Pan-Pearl River Delta. A Formulaic Aspiration or A New Imagination. *Built Environment*, 34(4), pp.408–426.

Yeh, A.G.-O., Wu, F., 1996. The New Land Development Process and Urban Development in Chinese Cities. *International Journal of Urban and Regional Research* 20, pp.330–353.

Zhu, J., 2004. From land use right to land development right: institutional change in China urban development. *Urban Studies*, 41, pp.1249–1267.