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# **The Discourses, Governance and Configurations of Polycentricity in Transitional China: A Case Study of Tianjin**

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**September 2020**

## Abstract

Polycentricity has been identified as a prominent feature of modern landscapes as well as a buzzword in spatial planning at a range of scales worldwide. Since the Reform and Opening-up Policy in 1978, major cities in China have experienced significant polycentric transition manifested by their new spatial policy framework and reshaped spatial structure. The polycentric transformation has provoked academics' interests on structural and performance analysis in quantitative ways recently. However, little research investigates the nature of (re)formation and implementation of polycentric development policies in Chinese cities from a processual and critical perspective.

This research interprets the underlying meanings and rationality of polycentric development strategy in planning discourse and explains how concrete centres within the polycentric system are created, governed and materialized to facilitate the implementation of polycentric policies in the special context of political system, spatial planning system and socio-economic conditions in China. Referring to existing literature of polycentricity and theories of urban space, this research develops a novel theoretical framework, which holds that polycentricity is produced by the articulation of state power, planning profession and produced space. The research is founded on an embedded case study of Tianjin based on empirical data derived from interviews with stakeholders and secondary data.

Through a discourse analysis of four Tianjin City Master Plans, discourses of 'polycentric urban settlements', 'functional polycentricity', 'polycentric growth nodes' and 'nested polycentricity' are identified, which are deployed in different ways with variegated composition of spatial elements. Moreover, rather than being mere technocratic practice, the production and legitimation of distinct discourses is essentially an articulation of multi-scalar power involving various stakeholders, which is disguised and justified by the planning profession. The findings demonstrate that polycentricity is a malleable concept and its fluidity creates space to accommodate consensus or to allow the play of contested interests and policy experiments.

Based on that, this research further selects centres in Tianjin Binhai New Area Core Zone, Wuqing District and Dongli District as embedded cases to explore how the polycentric development policy is implemented in practice. The empirical findings from local perspective show that these centres are created or formed according to different contexts and logics, and they are consolidated by employment of a portfolio of tools and instruments such as new planning and urban design, establishment of financial and development corporations, exclusive preferential policies, manipulation of public sector, land development and institutional innovation. Correspondingly, these centres have experienced distinct development trajectories and shown different spatial outcomes from the perspectives of urban form, functional composition, and spatial identity. It is suggested that significant gaps and contradictions exist between spatial visions and actual development, which poses challenges for sustainable development.

# Table of Contents

<b>Abstract.....</b>	<b>i</b>
<b>List of Tables .....</b>	<b>vii</b>
<b>List of Figures .....</b>	<b>viii</b>
<b>Acknowledgement .....</b>	<b>x</b>
<b>Author's declaration .....</b>	<b>xi</b>
<b>List of Abbreviations .....</b>	<b>xii</b>
<b>Chapter 1 Introduction.....</b>	<b>1</b>
1.1 Polycentric transition in China: manifestations in the policy agenda, urban reality and academic debate .....	3
<i>1.1.1 The quest for polycentricity in the policy agenda .....</i>	<i>3</i>
<i>1.1.2 Restless urbanisation and new growth on the edge .....</i>	<i>4</i>
<i>1.1.3 Recent academic attention to polycentricity in China .....</i>	<i>5</i>
1.2 Research aims and objectives .....	6
1.3 Thesis structure .....	9
<b>Chapter 2 Unfolding polycentricity: concept and theory .....</b>	<b>12</b>
2.1 Introduction .....	12
2.2 Evolution of urban form.....	12
<i>2.2.1 The rise of the polycentric city and region .....</i>	<i>12</i>
<i>2.2.2 Driving forces for polycentric development.....</i>	<i>14</i>
<i>2.2.3 Polycentricity as a spontaneous process .....</i>	<i>17</i>
2.3 Theorising polycentric development.....	18
<i>2.3.1 Modelling polycentric development .....</i>	<i>18</i>
<i>2.3.2 Reformulation of urban system theory .....</i>	<i>20</i>
<i>2.3.3 Agglomeration economies and polycentricity.....</i>	<i>21</i>
2.4 Fuzziness and fluidity of polycentricity .....	23
<i>2.4.1 Scale dependency and sensitivity .....</i>	<i>24</i>
<i>2.4.2 Morphological, functional and strategic polycentricity.....</i>	<i>25</i>

2.4.3 <i>Polycentricity as an intermediate state</i> .....	26
2.5 Unfolding polycentric configurations .....	26
2.5.1 <i>The polycentric city</i> .....	26
2.5.2 <i>The polycentric urban region</i> .....	28
2.5.3 <i>The polycentric urban field</i> .....	30
2.6 Conclusion and discussion .....	33
<b>Chapter 3 Polycentricity in strategic vision: planning and governance..</b>	<b>35</b>
3.1 Introduction.....	35
3.2 Changing paradigms in urban forms .....	35
3.2.1 <i>Compact versus dispersed pattern</i> .....	36
3.2.2 <i>Polycentricity: an alternative form towards sustainability?</i> .....	38
3.3 Planning and polycentric development .....	40
3.3.1 <i>Planning for polycentricity</i> .....	40
3.3.2 <i>Planning of polycentricity</i> .....	42
3.4 Governance and Polycentricity .....	44
3.5 Spatial identity: bridging vision and reality .....	48
3.6 Conclusion and discussion .....	51
<b>Chapter 4 Theoretical framework and methodology .....</b>	<b>55</b>
4.1 Introduction.....	55
4.2 A new epistemology of urban space .....	55
4.2.1 <i>The production of urban space</i> .....	55
4.2.2 <i>The politics of space</i> .....	58
4.3 The construction of the theoretical framework .....	60
4.4 Research methodology .....	64
4.4.1 <i>Embedded case study</i> .....	64
4.4.2 <i>Data collection and analysis</i> .....	67
4.4.3 <i>Research ethics</i> .....	77
4.5 Conclusion .....	77
<b>Chapter 5 Contextualising polycentricity in China .....</b>	<b>79</b>
5.1 Introduction.....	79
5.2 Political and institutional context.....	79

5.2.1 Hierarchical and fragmented administrative framework .....	80
5.2.2 State entrepreneurialism .....	82
5.2.3 Rescaling of state power .....	85
5.3 The changing planning system.....	86
5.3.1 Spatial planning system in China.....	86
5.3.2 The City Master Plan: an arena for polycentric rhetoric .....	92
5.4 Dynamics of peripheral space .....	95
5.5 Conclusion .....	96
<b>Chapter 6 The (re)making of polycentricity in Tianjin’s spatial planning discourse since 1978 .....</b>	<b>98</b>
6.1 Introduction.....	98
6.2 Specific context of Tianjin .....	99
6.2.1 A brief history of Tianjin and the origins of polycentricity.....	99
6.2.2 Administrative adjustments since the foundation of PRC .....	100
6.2.3 Socio-economic conditions for plan-making.....	101
6.3 Overview of the master plans.....	103
6.3.1 Master plan before 1978.....	103
6.3.2 Four master plans since 1978.....	104
6.3.3 Key spatial concepts in Tianjin City Master Plans.....	105
6.4 The discourse of polycentricity in Tianjin’s Master Plans .....	108
6.4.1 Confirmation of polycentric urban settlements: the 1986 plan .....	108
6.4.2 Designing ‘functional’ polycentricity: the 1999 plan .....	111
6.4.3 Creating polycentric growth nodes: the 2006 plan .....	114
6.4.4 The emergence of nested polycentricity: the 2016 plan.....	117
6.5 Power relations, technical knowledge, and polycentric system of Tianjin .....	125
6.5.1 Power relations between state actors .....	125
6.5.2 Role of planning professionals.....	129
6.5.3 Polycentric system and conceived centres in Tianjin .....	131
6.6 Conclusion and discussion .....	133
<b>Chapter 7 Forging a new centre in TBNA: the birth and death of Yujiapu Central Business District .....</b>	<b>135</b>

7.1 Introduction .....	135
7.2 Context for the designation of a new CBD in TBNA .....	136
7.2.1 <i>The rise of TBNA as a new city (region) in Tianjin</i> .....	138
7.2.2 <i>Governance reform in TBNA</i> .....	141
7.2.3 <i>The role of Yujiapu CBD in TBNA</i> .....	142
7.3 The rationale and governance of Yujiapu CBD .....	145
7.3.1 <i>Decision making and the master plan of Yujiapu</i> .....	145
7.3.2 <i>Rationality of the new CBD proposal</i> .....	148
7.3.3 <i>Governance of Yujiapu CBD</i> .....	151
7.4 Approaches to developing a new centrality .....	153
7.4.1 <i>State-led financing and financialising of new development</i> .....	153
7.4.2 <i>Policy incentives to attract new business and talents</i> .....	156
7.4.3 <i>Place marketing through ambitious urban planning and design</i> .....	161
7.4.4 <i>Public bodies as new entrants</i> .....	164
7.5 The socio-spatial outcome of Yujiapu CBD .....	167
7.5.1 <i>'New Manhattan' with a fake prosperity</i> .....	167
7.5.2 <i>Internal and external fragmented space</i> .....	170
7.5.3 <i>Identity of a 'ghost city'</i> .....	175
7.6 A disappearing CBD .....	177
7.6.1 <i>Incorporation into TEDA</i> .....	177
7.6.2 <i>Positioning adjustment</i> .....	178
7.6.3 <i>Challenge from Xiong'an New Area</i> .....	179
7.7 Conclusion and discussion .....	181

## **Chapter 8 The emergence of centres in-between: the retrofit of Dongli and Wuqing in the polycentric development of Tianjin..... 184**

8.1 Introduction .....	184
8.2 Location, history and governance framework of Dongli and Wuqing.....	185
8.2.1 <i>The geography of Dongli and Wuqing</i> .....	186
8.2.2 <i>The history and urban process of Dongli and Wuqing</i> .....	187
8.2.3 <i>Governance framework of Dongli and Wuqing</i> .....	192
8.3 Spatial transformation in Dongli and Wuqing .....	195
8.3.1 <i>From multiple enclaves to polycentric spatial pattern</i> .....	196

8.3.2 <i>Origins and conditions of new centres</i> .....	201
8.4 Strategy adjustment at the local level.....	205
8.5 Approaches to polycentricity in Dongli: power reshuffles, planning practice, and spatial changes .....	207
8.5.1 <i>Rural consolidation and urbanisation</i> .....	208
8.5.2 <i>A new green belt between Central District and TBNA</i> .....	213
8.6 Approaches to polycentricity in Wuqing: power reshuffles, planning practice, and spatial changes .....	217
8.6.1 <i>Land-centred expansion</i> .....	217
8.6.2 <i>Cross-boundary cooperation</i> .....	219
8.6.3 <i>Joining the urban network through the TOD mode</i> .....	225
8.7 Comparison of polycentric development between Dongli and Wuqing .....	230
8.7.1 <i>The emergence of centres in-between</i> .....	231
8.7.2 <i>Differences between these centres</i> .....	232
8.8 Conclusion and discussion .....	237
<b>Chapter 9 Conclusion: toward a Chinese approach to polycentricity...</b>	<b>241</b>
9.1 Introduction.....	241
9.2 Summary of major findings .....	242
9.2.1 <i>(Re)formation of polycentric discourses and their underlying meanings</i> .....	244
9.2.2 <i>From vision to implementation: production of new centres</i> .....	249
9.3 Contributions.....	252
9.3.1 <i>Contributions to the debate on polycentricity</i> .....	252
9.3.2 <i>Methodological reflections</i> .....	257
9.4 Policy implications.....	259
9.5 Future research agenda.....	262
<b>List of Reference.....</b>	<b>264</b>
<b>Appendix 1 List of Interviewees .....</b>	<b>288</b>
<b>Appendix 2 Guiding Questions for Semi-structured Interviews.....</b>	<b>290</b>



## List of Tables

Table 2.1 Urban system in central place model versus network model.....	21
Table 2.2 Unfolding three major polycentric configurations.....	32
Table 5.1 Three series of plans in China's spatial planning system before the establishment of Ministry of Natural Resources.....	88
Table 5.2 The changes in Chinese Master Plan .....	94
Table 6.1 Important Master plans since 1949 .....	105
Table 6.2 Spatial concepts in Tianjin City Master Plans .....	107
Table 6.3 Discourse of polycentricity in Tianjin's Master Plans .....	124
Table 6.4 Selected characteristics of the centres.....	132
Table 7.1 TBNA Master Plans and the role of the new CBD .....	144
Table 7.2 Preferential policies in Yujiapu CBD .....	159
Table 7.2 (Continued) .....	160
Table 7.3 Administrative adjustments of functional zones in TBNA.....	178
Table 8.1 Main socio-economic indicators for Wuqing and Dongli.....	191
Table 8.2 The approaches to the formation of centres .....	236
Table 8.3 Comparison of polycentric development in Dongli and Wuqing .....	239

## List of Figures

Figure 3.1 Sustainable urban form: polycentric and monocentric .....	39
Figure 4.1 An analytical framework to understand polycentricity in China.....	63
Figure 4.2 Location of Tianjin .....	66
Figure 5.1 Administrative framework of Chinese cities .....	80
Figure 6.1 Planning cycles and socio-economic conditions in Tianjin.....	102
Figure 6.2 The evolution of industrial structure, 1978-2017 .....	103
Figure 6.3 Polycentric vision in the 1999 Tianjin Master Plan (1996-2010) .....	114
Figure 6.4 Polycentric vision in 2016 draft Tianjin Master Plan (2015-2030).....	123
Figure 7.1 Planning area of TBNA and the location of Yujiapu CBD .....	137
Figure 7.2 The economic growth of Binhai New Area 1994-2014 .....	140
Figure 7.3 Overall layout of Yujiapu CBD in its master plan (2010-2020) .....	147
Figure 7.4 A variegated multi-level governance of Yujiapu CBD .....	152
Figure 7.5 Financing and financialising the development of Yujiapu CBD.....	155
Figure 7.6 Tianjin Pilot Free Trade Zone Administrative Committee.....	158
Figure 7.7 Landscape design of Yujiapu CBD .....	164
Figure 7.8 Distribution of public sectors in Yujiapu CBD .....	166
Figure 7.9 A glance at Yujiapu CBD.....	168
Figure 7.10 Office space in TBNA .....	171
Figure 7.11 Hai River Moveable Bridge between Xiangluowan and Yujiapu .....	173
Figure 7.12 Public Transport Accessibility in Yujiapu CBD .....	174
Figure 7.13 Global Go Underground Shopping Mall .....	176
Figure 7.14 Land use adjustment in Yujiapu CBD .....	179
Figure 8.1 Location and major centres of Dongli and Wuqing.....	187
Figure 8.2 Fragmented governance in Dongli District .....	193

Figure 8.3 The governance of planning, development control, land management in Tianjin .....	195
Figure 8.4 Major centres and enclaves in Dongli District .....	198
Figure 8.5 Major centres and enclaves in Wuqing District.....	200
Figure 8.6 Built environment changes in Huaming Town and Huaming Hi-Tech Zone...	211
Figure 8.7 The planned third main centre in Tianjin Strategic Plan .....	213
Figure 8.8 The green belt plan and regulations on places between Central District and Binhai New Area.....	216
Figure 8.9 A pilot zone for cross-boundary cooperation between Tongzhou, Langfang and Wuqing.....	225
Figure 8.10 The application of TOD principle in Wuqing New Town (top) and Jing-Jin Industrial City (bottom) .....	227
Figure 8.11 Built environment changes in Wuqing .....	228
Figure 8.12 Spatial development mode in Dongli (left) and Wuqing (right).....	234
Figure 9.1 Re-examining the theoretical framework and the relationships between state power, planning profession and space .....	243

## Acknowledgement

I am particularly grateful to my two supervisors, Professor Ya Ping Wang and Professor Keith Kintrea for their delicate support and guidance throughout my study in Glasgow and the writing of this dissertation. Professor Ya Ping Wang and Professor Keith Kintrea are approachable, knowledgeable, and responsible. They have offered me constructive supervision over last four years. They safeguard my own research interest, provided intellectual assistance in the studies, supported me to attend conferences and helped me with my English in the process. Without their help, this research would never have been finished in this form.

I would like to thank the College of Social Science PhD Scholarship at University of Glasgow as well as the financial support from UK Economic and Social Research (ESRC) for my fieldwork. This research would not have been completed without the financial support I have received from them.

I would also like to thank all staff and PhD colleagues at Urban Studies. I am also grateful to the GAPS research group, PGR office and other staff from school of Social and Political Sciences for their help during the period of my study in Glasgow.

I would also like to express my sincere gratitude to all the participants who offered time and shared their knowledge and expertise during my fieldwork. Especially, I would like to acknowledge colleagues from Nankai University and alumni from Peking University, who offered tremendous assistance in access to interviewees in the field.

Finally, I would appreciate the support from my family members for their unconditional love, care, and encouragement. I would like to specially offer my gratitude to my wife, who encouraged me to pursue my PhD and accompanied me in my overseas life. She has given practical and spiritual support and made this journey more enjoyable and less stressful for me. This dissertation would be a special gift for her and our forthcoming baby.

## **Author's declaration**

‘I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.’

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

## List of Abbreviations

CAUPD	China Academy of Urban Planning and Design
CBD	Central Business District
CCD	Central Commercial District
CCP	Communist Party of China
CDB	China Development Bank
ESDP	European Spatial Development Perspective
ESPON	European Spatial Planning Observation Network
EU	European Union
FUR	Functional Urban Region
FYP	Five-Year Plan
GBP	Great Britain Pound
IEZ	Innovation and Entrepreneurship Zone
LETDA	Langfang Economic and Technology Development Area
LGFV	Local Government Financial Vehicles
MCR	Mega-City Region
MFOZ	Major Function-Oriented Zone
MLG	Multi-level Governance
MLR	Ministry of Land and Resources
MOHURD	Ministry of Housing and Urban-Rural Development
MSD	Modern Service District
NCRPA	National Comprehensive Reform Pilot Area
NDRC	National Development and Reform Commission
PC	Polycentric City
PRC	People of Republic China
PRD	Pearl River Delta
PUF	Polycentric Urban Field
PUR	Polycentric Urban Region
RMB	Ren Min Bi
SOM	Skidmore Owings and Merrill
TAUPD	Tianjin Academy of Urban Planning and Design
TBNA	Tianjin Binhai New Area

TBNACIGC	Tianjin Binhai New Area Construction and Investment Group Co., Ltd
TBUPDI	Tianjin Bohai Urban Planning and Design Institute
TEDA	Tianjin Economic-Technological Development Area
TJBLRHA	Tianjin Bureau of Land Resources and Housing Administration
TJDRC	Tianjin Development and Reform Commission
TJPFTZ	Tianjin Pilot Free Trade Zone
TOD	Transit-Oriented Development
TPFTZ	Tianjin Port Free Trade Zone
TVE	Township and Village-owned Enterprises
TYIHGC	Tianjin Yujiapu Investment and Holding Group Co., Ltd
UIA	International Union of Architects
YRD	Yangtze River Delta

## Chapter 1 Introduction

*'One of the most interesting features of modern urban landscapes [is] the tendency of economic activity to cluster in several centres of activity.'* (Anas, et al., 1998: 1439)

*'Polycentric development has rapidly become the buzzword amongst spatial planners in Europe, both in European policies and at the level of European countries.'* (Waterhout, et al., 2005: 163)

With the transition to Posts-eras (Post-industrial, Post-modern, Post-Fordist and Post-suburban), spatial configurations of cities are undergoing dramatic changes and have taken on more polycentric forms (Hall, 1997; Wu, 1998a; Kloosterman and Musterd, 2001; Davoudi, 2003; Phelps *et al.*, 2006). A polycentric spatial pattern has indeed become an increasingly prominent feature of the modern urban landscapes worldwide. Driving forces such as advances in transport and information and communication technology, the transformation in production system and the emergence of a more globalized economic system, have created new spatial organization of socio-economic activities and led to an increasing scale and scope of spatial units. The polycentric features have become evident in metropolis and city regions by the rank-size distribution of agglomerations and complex flows of people, good and information within and between them.

If the polycentric spatial form has experienced a long-term process of evolution, the polycentric discourses and policies have newly sprung up in the policy and planning realm recently, especially in last three decades. Polycentricity has become a planning doctrine and normative framework of spatial planning in (North-west) Europe. The popularity of polycentricity in Europe is related to its plurality of institutional system on one hand. Polycentrism has become a political discourse to facilitate the cooperation in spatial planning and integration of different national traditions in spatial development planning and management at the pan-European level. On the other hand, this spatial development mode is regarded as one of the best strategies for managing urban development, balancing spatial disparities, achieving social cohesions and economic competitiveness at simultaneously. This concept could bridge conflicting interests and objectives within one framework. The Interreg programme funded by European Regional Development Fund is a means to advance



territorial cooperation in spatial planning and practice (Hague and Kirk, 2003). It supported many research projects for better understanding of the application of the principle of polycentricity in *European Spatial development Perspective* (ESDP). Important research projects, such as European Spatial Planning Observatory Network (ESPON) and POLYNET (Hall and Pain, 2006) have established a cross-national network of researchers and a learning platform, which can provide profound and innovative knowledge about the evidences, implications and policy recommendations on polycentric development within and between European countries and major regions.

In the recent decades, the concept of polycentricity has also attracted attention from scholars, planners and policymakers. A great deal of research in different disciplines has focused on the conceptualization of polycentricity and critically discussed its empirical performance at different geographical scales. This concept has also triggered vibrant policy debates and narratives. Many special issues of academic journals such as *European Planning Studies* (1998, 6.4; 2015, 23.6), *Urban Studies* (2001, 38.4), *Built Environment* (2005, 31.2; 2006, 32.2), *Regional Studies* (2008, 42.8; 2014, 48.12), and *Urban Research and Practice* (2009, 2.3) have been published to advance the understanding of polycentricity. A research network 'Polycentric Urban Regions' funded by Regional Studies Association was newly established in 2017 to bring together international researchers and key themes on PURs. This research network held a series of workshops, which involved many international scholars from Central and Eastern Europe and China. These academic events will finally result in new special issues in near future.

Perhaps influenced by the inspiring research in the West, the concept of polycentricity and its potential also appeals to planners, policy makers and geographers in China. In the context of the globalization of the economy and rapid urbanization in China, Chinese cities have experienced huge urban transformation in institutions, urban forms and economic and societal development since the implementation of the Reform and Open-door policy. With these changes, many cities and regions began to display polycentric features in rapid development process, and the polycentric development principle has been widely applied into their spatial planning. In other words, a significant polycentric turn can be seen in post-reform China. The transition could be manifested in three aspects, namely the desirability in urban and regional policy, the emergence of polycentric landscapes and recent academic discussion.

## 1.1 Polycentric transition in China: manifestations in the policy agenda, urban reality and academic debate

### 1.1.1 The quest for polycentricity in the policy agenda

In transitional China, polycentric development strategy can be easily identified in recent policy and planning vision. The emergence of polycentricity in China is highly related to its political and economic transition. Although the marketisation process is evident and the relation between state, market and social relations has become somewhat more relaxed, China is still characterized by its strong state intervention and the state dominance over spatial production (Lin, 2007; Wu, 2015). State intervention is still an important driving force to alter the organization of cities and regions. Polycentric development vision is often pursued in national, regional and local strategies that have produced great impacts on the changing spatial form of regions and cities.

At the intra-city level, polycentricity has become a normative agenda in master planning practices in China to determine the future spatial structures (Cheng and Shaw, 2017). Many mega cities such as Shanghai, Nanjing, Guangzhou and Tianjin have adopted this strategy in their previous master plans in different ways. Polycentricity is regarded as an ‘ideal’ development model with little doubts and the application of polycentricity in city master plan is supposed to resolve the ever-increasing problems associated with the unprecedented urbanisation process of recent decades (*ibid.*). This concept has also been vibrantly applied to newly emerging plans outside the statutory planning system such as urban strategic development plans and regional plans since the early 2000s. For example, transforming a monocentric urban structure to a polycentric one is one of major measures in the urban strategic plan in many Chinese cities for promoting urban development (Wu and Zhang, 2007). The emergence of urban strategic plans or concept plans is driven by a more entrepreneurial local government and therefore polycentricity here is an instrument for enhancing economic competitiveness.

Polycentricity is usually achieved through construction of new city centres or administrative annexations. Beyond the explicit use of the term polycentricity in different types of plans, there are many new planning concepts (e.g. Sub-centres, New Towns, New Districts, New

Central Business District, etc.) that imply polycentricity, frequently presented both in the mass media and in the planning and official documents published by governments. According to the book *China's New Town and New District Development Report* (Feng *et al.*, 2016), the development of new towns and new districts has been advocated by local governments and the number of the new towns and new districts at the county-level and above exceeded 3500 by the 2016. New towns and new districts in China have variegated types such as development zones, university towns, eco-cities, and airport cities. The total number of new towns and new districts continued to grow after 2016. These newly planned zones are regarded as important platforms for urbanization and economic development, which also reflect the aspiration of governments for polycentric development. Typical recent cases are the designation of a new administrative center in Beijing's suburb Tongzhou in 2015 for the relocation of the Beijing municipal government and a newly approved national level New District, Xiong'an New Area in Hebei Province in 2017. These two flagship projects are supported by the central state and represent the quest for polycentric development strategy at both city and regional level, and the intervention of the state in the recent polycentric transition.

### 1.1.2 Restless urbanisation and new growth on the edge

In pre-reform China, cities were highly concentrated and standardized, with a dense urban core and self-contained work units and communities throughout the cities (Gaubatz, 1999). Since the reform policy in late 1970s, China has experienced broader social, economic and cultural changes due to the transition to market-oriented economy, decentralization of decision-making and fiscal powers, the relaxation of household registration policy. These changes have led to significant changes in the structure and form of cities, not only rapid urban expansion but also the emergence of polycentricity or multi-nucleated urban form (Schneider *et al.*, 2015).

The term '*restless*' reflects the incredible scale and speed of ongoing urban development in China (Wang *et al.*, 2016) and the emergence of diversified urban landscapes (Shen and Wu, 2012). The urbanization level of China reached 50 percent in 2011, while this figure was less than 20 percent at the start of Open-door reform (NSB, 2011). With continuous globalization, major cities in China, especially the coastal cities have experienced dramatic growth and have been in a period of functional transition. The knowledge-based economy

like producer services, creative industry and tourism have become the backbone industries and the traditional industries began to move to small towns and the suburbs.

Although the traditional city core area still dominates urban development through contiguous expansion and large-scale regeneration projects, the urban landscapes in the peripheral area seem much more restless and complex. The broader social, economic and culture changes have led to the large scale urban expansion, suburbanization and new growth on the edge (Zhou and Ma, 2000; Zhou and Logan, 2008). Planned places such as clustered residential communities, new towns, brand-new university campuses, and development zones tend to be developed in the urban periphery in many Chinese cities (Ren, 2013). The urban peripheries have also become '*mosaics of different social world*' based on economic and social structural shift (Ren, 2013). Suburban areas house high-income commuters, working classes and migrants all at once (Zhou and Logan, 2008), and are also comprised high-rise building, high-order services and commercial facilities (Gaubatz, 1999; Lin, 2001). Therefore, density is not only the feature of city core, but also in Chinese suburb and edge cities (Wu and Phelps, 2011). Chinese cities are evolving towards a polycentric spatial structure because of the new growth and new concentration in suburban and peripheral area.

### 1.1.3 Recent academic attention to polycentricity in China

This polycentric transformation process has not only become embedded in the policy agenda and public consciousness but has aroused academic discussion in China. As many cities and regions have evolved from a monocentric to a polycentric spatial pattern, recent research in the fields of geography and economics has noted this interesting phenomenon and attempted to analyse and investigate this tendency based on morphological and functional characteristics.

Most studies focus on morphological polycentricity by investigating the employment or population distribution (Yang *et al.*, 2014; Liu and Wang, 2016; Huang *et al.*, 2017), land use change (Wu, 1998b; Yue *et al.*, 2010) or property values (Qin and Han, 2013). Thanks to the availability of data on knowledge-based flow of people and information, the spatial analysis of polycentricity has been extended recently to its functional dimensions. Emerging research has begun to analyse the inter-city relations by exploring the transportation network (Liu *et al.*, 2016) and knowledge network (Li and Phelps, 2017). Based on the analysis on

polycentric spatial pattern, some researchers further evaluated the performance of polycentric spatial pattern regarding its impacts on economic competitiveness, social cohesion and environmental sustainability (Zhang *et al.*, 2017; Li and Liu, 2018; Li *et al.*, 2019).

The extant literature mainly discusses the reality of polycentric development by employing a variety of quantitative methods and data sources. They were evidence based and tried to investigate to what extent the cities and regions in China are polycentric from different perspectives and database. Most of quantitative papers were conducted at the regional scale, although the spatial analysis of polycentricity originate from intra-city level. The common feature of existing literatures is that they recognize the role of planning and state influences on polycentric urban development in China and ascribe it to both the planning efforts by governments and to market forces in post-reform China. There is, however, little research that investigates polycentricity in urban planning theories and practices.

## 1.2 Research aims and objectives

From the introduction above, the concept of polycentricity in China is multifaceted, which is embedded in the policy agenda, manifested by urban transition and analysed by academics. There seems lack a common language between policymakers, planners, academics, and the public. Therefore, there is a need for a systematic and critical discussion to bridge these distinct approaches and interpretations. My interest in polycentric development originated from my own education and working experiences. When I was an undergraduate and master student, I garnered knowledge mainly from classes and textbooks and was trained as a geographer and planner. I learned of the polycentric spatial pattern in the urban ecology theories of Chicago School and the polycentric model in urban economic and economic geography. I was also taught that the polycentric and clustered spatial model is a principle that should be applied in spatial planning. At that time, Beijing, the city where I lived and studied, had suffered from severe ‘big city ills’ such as mismatch of job and residents, congestion and pollution. Polycentric development was taken for granted as a useful approach to solve these problems and advocated by governments and professionals.

After I graduated, I worked as a planning consultant. Fortunately, I participated in the making of the Thirteenth Five Year Plan for Beijing Tongzhou District between 2014 and 2016. In

that period, Tongzhou District was newly confirmed as the administrative sub-centre of Beijing. This project was regarded as the cornerstone for the spatial transition of Beijing after its rapid growth and concentric sprawl since the foundation of People's Republic of China. This project also reminded planners of the Liang-Chen Proposal (i.e. *The Proposal on the Location of the Central Government District*) proposed by Sicheng Liang and Zhanxiang Chen in 1950. During the plan-making process, I also referred to world-renowned new business districts in western countries such as Canary Wharf in London and La Défense in Paris in order to learn about some successful experiences.

In the plan-making process, I began to rethink the proposal for sub-centres and polycentric development in China. Many confused points began to emerge in this process. For example, how could my professional knowledge gained from university inform the policy and plan making in polycentric development? Why was the administrative sub-centre proposed again while a similar proposal was abandoned after the foundation of People of Republic China (PRC)? What does the polycentric spatial pattern refer to and what types of centres and nodes consist of this spatial vision? Why does the prefix of 'administrative' make Tongzhou stand out from other new towns and subcentres? What changes and impacts will this proposal bring to the future development of Tongzhou? What are the political influences on polycentric development? To what extent is polycentric development a natural stage of urban development or a technical solution? Are there any differences in China, compared to Western approaches?

In other words, polycentric development was often presented as a rational planning solution while the reality was something more confused, even chaotic. These questions further triggered my interest to systematically investigate the polycentric development at the intra-urban level in China. In my PhD research, I was a member of the ESRC-NFSC joint research project which focuses on urban transformation in China. One of the research tasks of this joint program was to investigate the urban structure/space changes and how the planning process influenced the spatial structure of the city at the neighbourhood and intra-city level in three case cities Tianjin, Chengdu and Hangzhou. This program allowed me to conduct such a research on polycentricity in China. All of three case cities have shown the aspiration for polycentric development and the evidence in urban structure (Schneider *et al.*, 2005; Qian, 2011; Wen and Tao, 2015; Liu and Wang, 2016). I selected Tianjin as my case city as there is no specific research on it, although it is one of the most typical polycentric cities in

China. The rationality of case selection will be further explained in the introduction of research method.

Since my research was enlightened by the policy making process, this research is policy-oriented in its nature. Distinguished by evidence-based research, the starting point of my research is to investigate polycentricity in case city based on the planning discourse rather than urban reality. Specific attention will be attached to the mutual relationship between power, knowledge, and space.

The overarching question addressed in this thesis is:

- How is polycentric development applied in spatial planning and implemented in practice in China's transitional context?

More specifically, the aim of this thesis can be unfolded in two aspects, which are interrelated and can be narrowed down to a series of sub-questions. Key objectives and the corresponding sub-questions needed to be addressed are identified in more detailed as follows:

- First, it aims to interrogate the changes in nuance and underlying meaning of polycentricity in several rounds of plans in order to clarify the rationales of the decision-making process by using Tianjin as a case study:
  - In what ways has the concept of polycentricity been deployed in Tianjin's several rounds of master plans?
  - How has the concept of polycentricity changed over time in Tianjin?
  - In which ways do the formation and legitimation of polycentricity reflect the changing competition for power among stakeholders in China's urban development?
  - What are the main features of the polycentric system in Tianjin in terms of the composition, positioning and recognition?
- Second, it aims to explain how concrete centres in polycentric system are created, governed, and materialized to facilitate the implementation of polycentric policies.

- How have the selected centres been forged under coalitions of different actors?
- What are the strategies, initiatives and actions that these actors adopt to build and consolidate new centrality in the concrete areas?
- What are the achievements and challenges of the formation of new centres beyond the traditional city centre?

### 1.3 Thesis structure

The thesis is organized in nine chapters. This first chapter briefly introduces the research background, the origin and importance of research on polycentricity and aims and objectives of this research. Chapter 2 and 3 provide a thorough overview of the extant literatures on polycentricity from different perspectives. Chapter 4 introduces the research framework and research methodologies. Chapter 5, 6, 7, 8 are the main body of the research which set up the context of China and examine the formation and delivery of polycentric development in the case city Tianjin. Finally, a synthesized and reflective conclusion is made in Chapter 9.

Following the chapter of introduction, Chapter 2 and 3 divide the literature on polycentricity into two parts: (1) conceptualising and theorising polycentric development; (2) planning and governance. Chapter 2 rethinks the concept of polycentricity and unfolds major polycentric configurations into an assembly of key elements, which enables the mobility of this concept into China. This chapter reviews the evolution history of urban form first. It then discusses three strands of theories that can explain polycentric development in research. Further, this chapter reviews the origins of fluidity of polycentricity from the perspectives of scales, dimensions, and its scalable property. The chapter then notes the need for clarification of this concept and unfolds major polycentric configuration based on previous discussion. Finally, drawing on the relevant discussion, this chapter provides critical points related to empirical research in the Chinese context.

Chapter 3 then discusses the planning and governance debates on polycentricity. It first retraces the changing paradigms in urban forms and regards the emergence of polycentric urban form as an alternative paradigm. Then it introduces several classic planning concepts associated with polycentric development, the application of polycentricity in spatial planning and governance under this policy framework in the western context. The planning theories and practices in western context have explained the reasons for the popularity of



this concept and have shown that the concept of polycentricity could be reinvented and reproduced across scales and regions and is subject to multiple interpretations. After that, the spatial identity is elaborated as a bridging concept to bring polycentric discourses and practices together. Based on this review, it calls for research on planning and governance of polycentricity in a Chinese context.

Chapter 4 is related to the research design and methodology used in this research. The chapter first introduces a new epistemology to understand urban structure/space, which treats the space and places as a multi-scalar process of socio-spatial transformation rather than a fixed, unchanging, and bounded spatial units. Drawing on the literature review on polycentricity and theories of spatial politics, an analytical framework is developed that could be applied to the following empirical studies. Meanwhile, the case study design, methods of data collection and analysis are further elaborated. The research is based on the data collected from fieldwork and official public resources, such as interviews, planning record, internal consultancy reports. These data are analysed by different qualitative methods. A discussion of ethical issues is also presented.

Chapter 5 sets up the general context of China's urban development and planning system according to the key elements related to polycentric development identified by the literature review and analytical framework. The major changes and characteristics in planning system, political and institutional system and the restless urban space in peripheral area in China are highlighted. The discussion of evolution of planning system, changing planning ideology, unique political and administrative system and the dynamic socio-economic changes provide a broader frame for the formation of polycentric policies.

Chapter 6 aims to respond to the first objective that how polycentric development is applied in spatial planning. It investigates the underlying meaning and rationale of the application of the polycentric development in Tianjin's City Master Plan diachronically. By reviewing and analysing four rounds of master plans in Tianjin since 1978 using discourse analysis, the changing polycentric discourses are identified and the underlying rationales, the mechanisms of power and the institutionalization process are examined. Finally, a polycentric system with multiple centres are also identified, which provide a basis for the embedded case selection in Chapter 7 and 8.

Chapter 7 and 8 attempt to respond to the second objective that how the polycentric development strategy is implemented through the development of concrete centres. It turns to focus on embedded cases selected during the research process. The analysis seeks to explore the formation of policy and the actual development at local level at the same time. Each chapter first explain why and how specific centre has been planned and what actors are involved in this process. Then it discusses the tools and instruments that are used to facilitate their development. After that, the spatial changes, functional repositioning and place identity are examined. In the end, the achievements and challenges facing these centres is analysed.

Chapter 9 finally brings together the major findings of this research. The research findings based on empirical study in Tianjin are summarized first. This is further expanded to the international debate on polycentricity. Following that, the implications on policy and plan making are analysed. The thesis concludes with reflections on the broader implications of the findings as well as the future research agenda.

# Chapter 2 Unfolding polycentricity: concept and theory

## 2.1 Introduction

A wide body of literature has greatly contributed to conceptualising and theorising polycentric development. However, polycentricity is still a fuzzy concept and there exist multiple interpretations and variations in different contexts. Polycentric development is becoming an evident phenomenon worldwide. Based on the research in the North America and Europe, this chapter aims to rethink the concept of polycentricity and to unfold major polycentric configurations into an assembly of key elements, which enables the mobility of this concept into China. The comprehensive literature review also informs key points that need special attention in the empirical analysis of this thesis.

This chapter reviews the evolution history of urban form first. The rise of polycentric cities and regions and their driving forces are elaborated and then polycentricity as a natural urban process is highlighted. It then discusses three strands of theories that can explain polycentric development in research. Further, this chapter reviews the origins of fluidity of polycentricity from the perspectives of scales, dimensions and its scalable property. The chapter then notes the need for clarification of this concept and unfolds major polycentric configuration based on previous discussion. Finally, drawing on the relevant discussion, this chapter provides critical points related to empirical research in the Chinese context.

## 2.2 Evolution of urban form

### 2.2.1 The rise of the polycentric city and region

In the preindustrial period, cities were small-sized and concentrated around the city core, which was dominated by religious, political, administrative and social functions (Sjoberg, 1960). The advent of the Industrial Revolution in the nineteenth century gave rise to the industrial city. In the early days of the industrialisation period, the industrial city inherited some characteristics of preindustrial city and showed a concentric zones pattern (Knox and Pinch, 2010: 20-22). Subsequently, western cities especially in Europe and North America

stepped into the stage of fast urbanisation. The size of the cities increased rapidly and began to extend outwards from the central area to the suburbs, initially along with the corridors.

While originating in the nineteenth century, suburbanisation emerged as the dominant process after the Second World War and became different from its original nature (Champion, 2001a). According to Cervero (1989), there are three waves of suburbanisation and the function of residence, manufacturing and commerce, business and high-technology sector dominates each wave of decentralisation in turn. 'Third wave' of suburbanisation can be viewed as the momentum of polycentric transition. The mass decentralisation of manufacturing, shopping and offices have given rise to the new centres of business and social services and created a multi-nucleated pattern of outer suburban centres in the post-industrial city (Stanback, 1991; Palen, 1997). Many terms have been coined to describe this new change in the form of city. Stanback (1991) developed the concept of 'new suburbanisation', and the emergence of new centres outside of central cities have been variously termed as 'exopolis' (Soja, 2000), 'exurbia' (Soja, 2000), 'technoburb' (Fishman, 1989) and 'edge cities' (Garreau, 1991).

Moreover, since the 1990s, the trend of globalisation, the shift of economic structure and technological advances in post-industrial city have reshaped both the physical and social structure significantly. Social and economic activities occurred on a growing geographical scale beyond the city. One of the typical consequences is the rise of polycentric spatial pattern at a larger regional or country scale (Hall and Pain, 2006). The process has turned historically separated metropolitan areas into functionally connected polynucleated urban regions. Polycentric transition in the spatial pattern of cities and regions have become more evident recently and have manifested themselves in different development phases. For example, Hanlon *et al.* (2009: 87) reviewed the historical evolution of metropolitan form in the United States and divided the metropolitan form into several phases characterised by distinct spatial features, which includes central cities (19<sup>th</sup> and early 20<sup>th</sup> centuries), early suburbs (the first half of 20<sup>th</sup> century), exurbs and edge cities (1970 to 1990s), edgeless cities (1980 to 2000s), the megalopolis (1960s to 2000s), boomburbs (2000s) and metroburbs (2000s).

### 2.2.2 Driving forces for polycentric development

Based on the evolution history of urban forms, polycentric transformation is embedded in the process of economic, technological, and socio-spatial transformation. The major forces facilitating polycentricity can be categorised into these three aspects. These changes or forces are not separate, but they are often intertwined to reshape the urban landscape.

#### *Technological innovation*

The spatial structure of modern cities evolved with technological innovation in transport and communication. Before 1850, freight transportation was highly reliant on harbours, rivers and canals because of low transport costs and substantial scale economies, and personal transport within the city was mainly by foot and horse-drawn carriage (Anas *et al.*, 1998: 1429). Similarly, the advent of railways in the late 19<sup>th</sup> century also created advantages near the station like waterway (*ibid.*). These means of transportation constrained the scope of urbanisation to relatively small but high-density centres. The centres were often manufacturing districts formed near the harbours or rail terminals, with mixed residences surrounding it (Moses and Williamson, 1967).

The innovation of mechanised and efficient long-distance transport modes enlarged the scope of the urban economies and accelerated the speed of urban expansion, which makes the polycentric development possible. Between 1850 and 1900, electric streetcars and subways supplementing human and animal powered transport and created ‘streetcar suburbs’ and the ‘nineteenth-century city’ by encouraging people to migrate out of the city (Anas *et al.*, 1998: 1429). Economic activities also became dispersed, concentrated around the stations and mass transport spokes. Then in twentieth century, the widespread use of the automobile led to large scale dispersion of businesses and residences. The improvements to highway and railroad system fostered new population clusters, facilitated inter-urban communication and increased the connection between cities and surrounding towns (Anas *et al.*, 1998; Garcia-López, 2012). With increasing city centre congestion and expanding connectivity and low-price land available in the urban fringe, the comparative advantage of historic city centre location gradually was weakened, and new centres emerged in the suburbs (Stanback, 1991). However, due to path dependency, the central areas around

historic harbours and rail terminals remained vital and the most important nodes in the city such as CBDs were often formed centred on these positions, for cities in Europe in particular.

Technological advances in information processing and telecommunications further altered the economic structure and spatial pattern (Castells, 1996; Gaspar and Glaeser, 1998; Hall, 1993; 1999). With the rapid process of globalisation and development of communication technology, the global economy is characterised by the flow and exchange of information, capital and cultural communication (Castells, 2010). The flow especially the knowledge-based flows of people and information have facilitated the complexity and interrelationship of cities. The 'space of flows' has underpinned the polycentric development at various scales and component centres shifted from the agglomerations of manufacturing to the concentration of services sectors and knowledge-based economy, which gives more emphasis on the network and cooperation. Information technology also fragmented the spatial distribution much further than was already happening in polycentric urban regions (Couclelis, 2000).

### *Economic transition*

Since the 1970s, Fordism has been gradually replaced by the post-Fordist system which is dominated by information and communication technology (Knox and Pinch, 2010: 28). The main sector of economic activities has shifted surely from manufacturing industries based on production to service activities, especially the informational economies (Hall, 1993). Informational industries have become the main driver of urban growth and played a vital role in shaping a new spatial structure since the 1980s. The information intensive industries include banking and finance, insurance, legal services, accounting and other business services (Castells, 1989: 144).

Coinciding with advance in technologies, decentralisation of routine functions (such as back offices) and household services have already been largely dispersed under conditions of Fordist suburbanisation (Van Criekingen *et al.*, 2007). However, the advent of the informational society produced a new logic for location choice of informational economic activity. Its locational logic is determined by access to information, by direct face-to-face communication or by electronic communication (Hall, 1993). Except for some informational services that require a high degree of immediacy that are still located in the biggest and the

most specialised centres like global cities, other informational industries like R&D, creative and cultural industries can relocate to cheaper and non-central sites (Hall, 1999; Van Criekingen *et al.*, 2007). Also, because of the flexible production system, the geographic clustering of high-technology industries becomes more flexible and there is a growth of 'new industrial space' in peripheral area (Knox and Pinch, 2010: 28). These changes in the drivers of industrial location have been translated into spatial restructuring and led to wider spatial division of labour. Just like Lever claimed, '*Fordism has been equated with suburbanisation and decentralisation, whereas post-Fordism is often invoked as a cause of recentralisation and reurbanisation*' (2001: 278).

### *Demographic transition*

The transformation to the post-industrial city not only involved technological and economic structure changes but also transitions in demography. Demographic regimes in the developed world have changed dramatically since the Second World War. The main demographic features and corresponding changing population and household profiles include: (1) longer life expectancy plus lower fertility after the baby boom generation led to the zero or even negative natural growth rate and an aging society; (2) The huge and increasing rate of net international immigration became the main source of population growth and diversified the ethnicity, race and culture, which made Western cities increasingly cosmopolitan; (3) Household composition has also changed dramatically and is now characteristics by many more non-traditional households (single-parent, female-headed, childless or one-person household, two-earner families etc.); (4) With changing household structures and economic development, the number of affluent households that have more freedom of choice and movement has increased (Champion, 2001b; Musterd and van Zelm, 2001; Knox and Pinch, 2010: 9).

Demographic transitions play important role in understanding urban and regional spatial restructuring (Clark, 1987). Compared to the 'demographic drives' behind urban restructuring, Champion (2001b: 668) employed the word 'conformity' to reflect the relationship between demographic change and evolving urban structure. On one hand, different urban structures like the monocentric city or the polycentric urban region will provide a different set of choices of places to live, which may change or reinforce current settlement patterns. On the other hand, residential behaviour and preference can be an active

force in shaping the urban landscape. The changing household types and their residential preferences contribute to the formation of polycentric city or polycentric urban region through their particular demands.

### 2.2.3 Polycentricity as a spontaneous process

Based on the historical review above, polycentricity is a spontaneous process along with the macro changing urban context. Polycentric urban structure is the consequence of urban resilience and adaptability to the changing environment. The emergency of polycentricity is caused by the recent techno-economic paradigm shift, which is a slow process taking place over decades. In other words, polycentricity is a product of evolution (Champion, 2001b). The development of urban function, form and pattern are governed by set of forces, which can be grouped into centripetal forces and centrifugal forces (Colby, 1933; Krugman, 1996). Polycentric development process is an expression of the dialectic and competition between concentration (centripetal forces) and deconcentration (centrifugal forces).

Some scholars adopt a simulation approach to prove that polycentric spatial pattern is an likely outcome of urban system (Batty, 2001; Krugman, 1996; Wu, 1998a). Wu (1998a) carries out an experiment based on cellular automatic approach and the results suggests that subcentres are formed through stochastic ‘errors’ like local development, and further, the accumulative population density and local interaction can facilitate the further development of these centres. When the negative effects emerge, a new centre in another location will be formed. Krugman (1996) posits that when the tension between centripetal and centrifugal forces satisfy certain criteria, a spontaneous polycentric metropolis will always be formed, regardless of the initial distribution, by developing a self-organisation model to simulate edge cities. Batty (2001) simulates the long-term spatial structure of Great Britain based on a series of spatial models at fine scales and the simulation confirms that the urban landscape is inevitable polynucleated with flattened rank-size distribution.

Champion (2001b: 664) summarizes three ways in which the polycentric urban configurations can evolve and emerge, namely the centrifugal mode, the incorporation mode and the fusion mode. A monocentric city can evolve into a polycentric urban system because of centrifugal forces of original centre and continuous growth of alternative centres. Polycentricity can also be formed by the coalescence of centres through the incorporation of



surrounding small centres or integration of several formerly independent centres in similar size because of separate growth and improvement of transport links between them. These modes can also occur at the same time, especially when the urban region system consists of more than one urban centre (Lambregts, 2006).

## 2.3 Theorising polycentric development

Although polycentric urban form had already been identified and emerged, the concept of polycentricity did not gain any real currency in academic discourses until the 1960s (Davoudi, 2003). Due to the accelerating pace of urban growth and spatial restructuring, the existing theories about urban structure and urban system were incapable of explaining the urban reality. Many new studies have emerged to address the new changes in spatial organisation. There are three main strands of literature in urban economics and geography that theorise polycentric development, namely (1) the reformulation of monocentric model to polycentric model, (2) the reformulation of the urban system concept and (3) the extension of agglomeration economies.

### 2.3.1 Modelling polycentric development

#### *From monocentric to polycentric model*

In urban economic research, theoretical models were developed and modified continuously to depict the transition process of urban spatial structure. Alonso's (1964) monocentric city model dominated the conceptualisation of the internal structure of cities until the 1970s. This model was then broadened to include production, transport and housing (Anas et al., 1998: 1434). The monocentric model argues that the Central Business District where jobs are located imports workers from the suburbs and exports goods and services to them based on bid-rent theory. The land use pattern is defined by the trade-off between desire for space and commuting cost.

Because of rapid and complex urban changes, the monocentric city model is no longer capable of depicting the urban structure. A polycentric model was presented to help explain the emergence of new employment beyond the Central Business District because of the growing significance of agglomeration economies in location choice. Fujita and Ogawa

(1982) theorised a non-monocentric model and formulated a multiple equilibria model of urban land use. Given different parameters, the model could yield multicentric as well as monocentric urban configurations. The equilibrium number of subcentres tends to rise with population and commuting costs, which has been tested and supported by the empirical studies in American metropolitan areas (McMillen and Smith, 2003). In the polycentric model, the bid-rent functions and land use density can be determined by the largest influence of one only centre, or by access to every centre and the sum of influences if various centres, according the assumption of the relationship between centres (Heikkila, *et al.*, 1989; Anas *et al.*, 1998: 1441).

### *Identification of sub-centres*

The emergence of polycentric model led to an increasing number of empirical studies that focus on the identification of (sub)centres in the polycentric urban configurations, primarily in North American metropolitan areas. Several methods have been applied to identify these subcentres that rival with traditional CBDs.

The formation of new subcentres can be explained by economies of agglomeration (Anas *et al.*, 1998), which can be achieved when economic agents are concentrated and located in spatial proximity. Based on agglomeration logic, centres are supposed to be a concentration of business activities. Besides, because of the significant size and the diversity of functions, centres are places which have enough magnitude to produce significant effects in the functioning of cities, especially regarding transportation systems, land value, population distribution, and service provision (McMillen, 2003). Similarly, Burger and Meijers claim centres are expected to have both absolute and relative importance, as the ‘importance’ of a centre can ‘*be ascribed to the settlement itself as an agglomeration and as a central place providing goods, services and jobs to surrounding places*’ (2012: 1131).

Therefore, most urban economists and geographers use employment density, population density and land use (value or change) to identify subcentres and evidence the existence of polycentric spatial configurations. The principle of identification subcentres in these different methods is to identify the significant peak value within the study area. A variety of methods have been used to identify intra-urban (sub)centres, such as local knowledge in administrative institutions, planning organisation or real estate firms (Anas *et al.*, 1998:

1433), cut-off thresholds (e.g. Giuliano and Small, 1991; Song, 1994; Cervero and Wu, 1997; Garcia-López and Muñiz, 2010), parametric methods (McDonald and Prather, 1994), and non-parametric methods (McMillen and McDonald, 1997; Leslie, 2010).

The (sub)centre delimitation methodologies can also be carried out through the functional approach. Urban centres can also be identified by the capacity of centrality. Centrality is generally reflected through interaction flows, such as journey-to-work flows, shopping flows, information flows (Bourne, 1989; Cladera *et al.*, 2009; Suárez and Delgado, 2009). These various approaches have confirmed the existence of polycentric structure at the intra-city scale by identification multiple centres. It is interesting to note that the former body of literature is mainly based on the US cases while the functional approach is more often applied to European metropolitan area.

### 2.3.2 Reformulation of urban system theory

Due to the shift to the informational economy and the growing spatial scale that social and economic activities occur, Hall (1999: 181-184) claims that the traditional Christaller's central place system should be modified into a new urban system. The seven-level hierarchy in central place theory needs to be supplemented by two additional levels (global cities and sub-global cities) and the three lowest levels in this system have disappeared. Cities survive in this system but have turned into polycentric urban regions due to increasing specialisation.

In Hall's new urban system, the traditional urban hierarchy remains existent or even enhanced. However, theoretical bases of central place model such as the hierarchy have been challenged with the rise of network economies. From the 1990s onwards, a number of studies on changing urban system have stressed the limitations of central place theory and hinted the new network system model to replace it (Batten, 1995; Meijers, 2007a). Burger *et al.* (2014) discuss the feature of network system and compare it with central place system (see Table 2.1). The most important feature of network model of spatial organisation is the presence of multidirectional relationships between relatively similar-sized and no hierarchical centres. Network model stresses a spatial integration and complementarity between different centres, which is more suitable in polycentric urban region (Meijers, 2007a). Therefore, both urban networks and polycentricity have been incorporated into policy discourse.

**Table 2.1 Urban system in central place model versus network model**

<b>Characteristic</b>	<b>Network system</b>	<b>Hierarchical system</b>
Morphological structure	Multi-nodal; Several centres in close proximity to each other; Centres of relatively similar importance	Uni-nodal; One principle centre; Relatively significant separation between city and countryside
Orientation of functional linkages and spatial integration	Multidirectional; Two-way core-periphery/ periphery-core linkages and crisscross linkages between centres of similar size	Unidirectional; Linkages directed at the principal centre; No relationships between centres of similar size
Type of spatial constellation	Network city or polycentric urban region	Monocentric metropolitan area
Relationship between spatial units	Tendency toward complementarities and regional cooperation	Tendency toward competition; Local orientation and dependence
Economic specialisation	Function of centres independent of centre size but dependent on urban network position; Spatial division of labour between centres (horizontal complementarities)	Economic function of centres dependent on centre size with higher-order functions concentrated in larger centres (vertical complementarities)
Economic externalities	Agglomeration economies shared among groups of cities of similar size; Relative absence agglomeration diseconomies	Agglomeration (dis)economies restricted to the urban core

Source: (Burger *et al.* 2014: 1922)

### 2.3.3 Agglomeration economies and polycentricity

The reformulation of the polycentric city model and the urban system paradigm are achieved by introducing agglomeration theories. They have been largely extended so that they provided better options for interpreting the rationality and transformation process of polycentricity at both urban and regional scales. Acknowledging various agglomeration economies and their spatial influences can help us understand the origins of polycentricity in comparison to traditional strands (scale, function and morphology) (van Meeteren *et al.*, 2016). The formation of clusters of activities and the location of these centres are determined by the agglomeration economies to a certain extent. There exist three different approaches

to conceptualise agglomeration economies, namely micro-economic foundations, geographical foundations, and macro-territorial foundations (Camagni and Capello, 2015), which are related to the polycentric development at a variety of scales.

At the micro level, technological and pecuniary externalities encourage enterprises to become located close together and concentrated within a certain physical distance. As a result of ‘agglomeration diseconomies’ and ‘proximity economies’, a polycentric rather than dispersed spatial pattern tends to be formed with several significant and interacting clusters of economic activities. The new centres are not formed randomly but depend on spatial heterogeneity (Anas *et al.*, 1998) and the existence of shadow economies (Camagni and Capello, 2015). In the geographical foundation of agglomeration economies, the influence of space cannot be ignored (Parr, 2002). Within a large spatial scope, economic externalities can be shared by a group of settlements, depending on the proximity to larger cities or metropolitan area. The terms ‘externality field’ (Phelps *et al.*, 2001) and ‘regional externalities’ (Parr, 2002) were coined to reflect agglomeration economies at wider spatial configuration via the process of ‘borrowed size’ (Alonso, 1973). The third approach highlights the networking and cooperation capabilities under which agglomeration economies can be fully exploited in different size classes of cities in a territory. This approach is related to ‘urban network externality’ (Capello, 2000) and can be termed a process of ‘borrowed function’ (Camagni and Capello, 2015).

Many empirical studies have emerged recently drawing upon these theories in China. Feng *et al.* (2013) employ both monocentric model and polycentric model to test the changing spatial pattern in Beijing and the results show Beijing is transitioning towards polycentricity and characterised by a monocentric model, a dual-centred model and a seven-centred model in this process according to the population density function. Other studies apply similar methods such as threshold that have been widely used in America metropolitan area to identify employment centres and test their influences in China (Huang *et al.*, 2015; Huang *et al.*, 2017). The network model of urban systems and city regions is also tested to reflect the polycentricity by the employment of a variety types of flow data (Liu *et al.*, 2016; Li and Phelps, 2017). Theories of agglomeration economies are mainly used to explain the performance of polycentric spatial pattern, especially in the economic term. The impacts of urban spatial structure on economic performance are largely associated with agglomeration economies and diseconomies effects of urban centres (Zhang *et al.*, 2017; Li and Liu, 2018).

## 2.4 Fuzziness and fluidity of polycentricity

The historical evolution of urban form and theories related to polycentricity suggest that the concept of polycentricity is by no means new. It can be traced back to the turn to the 20th century. For instance, Howard's Garden City Movement, initiated in the late 19<sup>th</sup> century, proposed a utopian vision of self-sufficient and interconnected new communities as satellites of the central city. Urban sociologists in the famous Chicago School employed urban ecological analysis to describe urban spatial patterns and generalised three types of internal urban structure. Based on the previous concentric zones and sectors model, Harris and Ullman (1945) generalised the 'multiple nuclei model' whereby cities develop around several discrete centres due to historical development or through migration and specialisation stimulated by new growth. In the planning realm, synonymous expressions of polycentricity appeared in French national and regional planning policy as early as the 1960s in the Gaullist period (Baudelle and Peyrony, 2005; Waterhout *et al.*, 2005). At the initial stage, this concept was employed at the urban region and intra-regional level but the term was not used explicitly. In 1991, the concept of polycentricity appeared in the *Europe 2000* (CEC,1991) as a central European spatial development principle and was then confirmed by the *European Spatial Development Perspective* (ESDP) (CEC,1999).

Although consensus has been reached on the multinucleated development phenomenon and its popularity in spatial planning policy, the definition of polycentricity is still not uniform. Polycentricity has a broad and fluid meaning. In urban studies, urban economics and geography, polycentricity literally means that there exist multiple centres (at least two) in a given territory (Kloosterman and Musterd, 2001). However, specifically, it is still a fuzzy concept with multiple interpretations because polycentricity means different things at different geographic scales, from different perspectives and according to different approaches and methods (Davoudi, 2003; van Meeteren *et al.*, 2016; Rauhut, 2017). On one hand, polycentricity can refer to spatial clusters of almost any type of human activity derived from the inherent complexity of city (Kloosterman and Musterd, 2001). On the other hand, planners, human and economic geographers, and politicians all embrace this notion as a dynamic and interdisciplinary concept (Davoudi, 2003). These two aspects lead to divergent interpretations of polycentricity by different people for different purposes. As exemplified by Davoudi:

*'Urban planners use the concept as a strategic spatial planning tool; economic and human geographers use it to explain the changing spatial structure of cities; the European Union Commissioners and their counterparts in member states often promote the concept as a socio-economic policy goal aimed at achieving a balanced regional development; and civic leaders use the term for 'place-marketing', presenting the notion as synonymous with pluralism, multi-multiculturalism and dynamism, as well as a symbol of the 'post-modern' lifestyle.'* (2003: 979-980).

The following section analyses the fuzziness and fluidity of polycentricity through investigating multiple geographic scales, perspectives, and measurability of polycentricity.

#### 2.4.1 Scale dependency and sensitivity

Polycentric development is a scale-sensitive geographical phenomenon that can take place on different geographic scales. Currently, polycentricity has been observed and analysed at various geographical scales, including the intra-urban, the inter-urban and inter-regional scales (Champion, 2001b; Davoudi, 2003; Kloosterman and Musterd, 2001; Liu and Wang, 2016). The polycentricity can also be applied at the global scale (Taylor *et al.*, 2008), which is based on the debates about 'world city' (Friedmann, 1986) or 'global city' (Sassen, 1991). The majority of extant literature focuses on three scales, which can be categorised into three levels, namely micro (intra-urban), meso (intra-region) and macro level (inter-region).

Traditionally, polycentricity has referred to and originated from intra-urban agglomeration. With the process of globalisation and regionalisation, this concept was applied to the larger geographical scales. The concept of polycentricity has been connected to '*such territorial concepts as 'city', 'urban region', 'mega-city-region', 'metropolitan area' and 'global city region'*' (Burger and Meijers, 2012: 1128). Moreover, lower-order geographical units can be merged into one functional unit at a higher-order scale, which means the polycentricity at a lower-order scale may become monocentric at larger scale, and vice versa (Hall and Pain, 2006: 4). The multiple scales increase the difficulty of conceptualising polycentricity.

#### 2.4.2 Morphological, functional and strategic polycentricity

Polycentricity can be analysed in a multi-faceted way. It has been shifted from an important analytical tool to a normative framework of spatial planning (Davoudi, 2003). As a descriptive and analytical tool, polycentricity is mainly used to depict and explain the evolving urban structure. As a normative goal, polycentricity defines the potential areas to cooperate and promotes the reality of polycentricity through building a common strategy. Giffinger and Suitner (2015: 1174) use the terms '*structural polycentricity*', '*institutional polycentricity*' and '*strategic polycentricity*' to distinguish different standpoints. Similarly, Rauhut (2017) divides the multiple interpretations into two categories, polycentrism and polycentricity. The former is regarded as a normative agenda or a sort of doctrine with significant political meaning, while the latter refers to scientific explanations. This section mainly discusses the structural polycentricity and polycentricity as the normative agenda will be discussed in next chapter.

Morphological and functional polycentricity are two distinct but complementary dimensions of structural polycentricity. The morphological dimension is determined by nodal features (like size, density, function), regardless of the relations between nodes (Burger and Meijers, 2012). Morphological polycentricity describes the geographic distribution of cities, towns or centres in terms of population and economic activities within the territory and stresses an even and balanced distribution (Burger and Meijers, 2012; Wen and Tao, 2015). Functional or relational polycentricity refers to interactions and cooperation (like network activities, flows) between centres and a balanced, multi-directional relationship is considered to be more polycentric (Burger and Meijers, 2012; Vasanen, 2012; Giffinger and Suitner, 2015). The linkage or relationship between centres are mainly related to knowledge-based flows of people and information (Hall and Pain, 2006; Green, 2007; Vasanen, 2012). Therefore, functional polycentricity is closely related to concept of 'space of flows' and 'network model'. This is a reason that functional polycentricity is more often included into policy discourse.

When depicting structural polycentricity, these two dimensions are complementary and are often combined in empirical research (e.g. Burger and Meijers, 2012). However, the specific urban system may have different performances along these two dimensions. Generally, morphological polycentricity is the precondition of functional polycentricity (Giffinger and



Suitner, 2015: 1175). Compared to functional polycentricity, morphological polycentricity is much easier to achieve than functional polycentricity. For example, most regions in the Netherlands tend to be more morphologically polycentric than functionally polycentric (Burger and Meijers, 2012), although the specialisation and network connections among cities in the Netherlands are well recognised.

#### 2.4.3 Polycentricity as an intermediate state

The definition of polycentricity varies in its degree of restrictiveness (Champion, 2001b: 664). ‘Pure’ polycentricity is merely theoretical, while too loose or arbitrary a definition makes the concept nonsensical. Green (2007) argues that polycentricity is not something that either does or does not exist. It is a scalable concept to measure the degree to which an urban system approaches ‘pure’ polycentricity. Furthermore, according to the different dimensions in spatial structure, polycentricity can be measured along both morphological or functional dimensions (Hall and Pain, 2006; Green, 2007; Meijers, 2008; Taylor *et al.*, 2008; Vasanen, 2012; Brezzi and Veneri, 2015).

### 2.5 Unfolding polycentric configurations

Due to the fluidity of polycentricity, it is necessary to tease out the most important polycentric configuration before undertaking empirical analysis. Drawing from Champion (2001b), polycentric configurations including the polycentric city, the polycentric urban region and the polycentric urban field at the intra-city, intra-regional and inter-regional scales respectively, are most often discussed in academic research and in policy making. This section attempts to clarify the differences between different polycentric configurations and to unfold the ambiguous definition of these polycentric configurations into an assembly of components and features (Table 2.2).

#### 2.5.1 The polycentric city

At the intra-urban scale, polycentricity means that population and economic activities disperse and reconcentrate to multiple sites beyond the traditional CBD or the nuclei zone of a city (Kloosterman and Musterd, 2001). The polycentric city is most likely to be observed in large cities or metropolitan area such as Los Angeles, London or Paris. When too many

economic activities are centralised at the city-core with a limited built-up area, the cost of congestion and the bidding up prices for land and labour will also limit the size and density of the agglomeration and drive cities to spread out (Davoudi, 2003: 982). Such decentralisation has not been spread out randomly but in the sense of an organised scattering of people and firms (Anderson and Bogart, 2001). Rapid decentralisation and reconcentration process on the edge of large cities gives rise to new centres that are distinguishable from dispersed or scattered form. The polycentric city also gains currency in policy and planning as it is believed that it can benefit from agglomeration economies and avoid diseconomies.

These centres are large concentrations of office and retail space connected to residential areas and transport networks. Centres refer to an area in a city where there is confluence of people and other activities (including political, economic and cultural activities). They are called 'sub-centres' because they are subsidiary to the old centres (Anas *et al.*, 1998: 1427). The traditional centre and sub-centres together with their hinterlands comprise the urban sub-system within the metropolitan area and configure the metropolis as 'a city of cities' (Cladera *et al.*, 2009). In the US context, the emergence of new employment centres contributes to the formation of the polycentric city and subcentres are identified by statistical methods. In the post-industrial city, centres are specialised agglomerations of high-order concrete functions or advanced producer services (Hall, 1999; Van Criekingen *et al.*, 2007). Van Criekingen *et al.* (2007) identified seven recurrent types of centres currently developing in European metropolitan areas, namely political centres, business centres (two types: Command and control, technology and creation), culture and retail centre, mass consumption centre, education and knowledge centre, logistics centres. Polycentric cities are made of the combination of these centres and sometimes several types of centres may overlap and interact in the same place. For example, the traditional city centre remains the most multi-functional part of most cities (*ibid.*). Similarly, Peter Hall (1999: 178) proposed an archetypal polycentric urban form in modern cities which included six main activity centres, namely a traditional business core, a secondary business core, a tertiary business core, an outer 'edge city', outermost 'edge cities' and specialised concentrations. Again, these specialised centres may only exist simultaneously in large metropolitan areas high on the urban hierarchy, like global cities, world cities or capital cities.

The boundary of the polycentric city is based on functional perspective rather than the administrative perspective. Cities are no longer mere morphological entities and the discrimination between central city and suburb, town and country has been eroded. Parr (2008) clarifies the definition of city through two concepts. The first definition is 'built city', which is a physical entity (a continuous or almost continuous surface). The second one is the 'functional urban region' (FUR), combining the adjacent districts or municipalities which have close interaction with the built city. A FUR is characterised by a single labour market area. A large proportion of research on polycentricity at the intra-urban level is inclined to adapt the FURs as the subject territory. The urban area or metropolitan area is an area together with the city core, suburbs and commuting hinterland.

### 2.5.2 The polycentric urban region

The polycentric urban region (PUR) has gained much more attention than the polycentric city recently, especially in the European context. Globalisation and the popularity of neoliberalism have led to the re-appreciation of the roles of the city region in the national and international system (Brenner, 1999; Hall and Pain, 2006; Scott, 2001). This trend requires intense regional cooperation to simultaneously secure economic competitiveness and ease environment and equity problems (Wheeler, 2002), and to further a 'spatial reconstitution of urban form' and 'reterritorialization' (Brenner, 1999; 2002).

The PUR is a typical region distinguishable from other regions, and it has gained much currency on policy agenda. PUR is a territory including a specific set of cities, none of which is dominant. Meijers defines a PUR as a region composed of '*a collection of historically distinct and both administratively and politically independent cities located in close proximity, well connected through infrastructure and lacking one dominating city in political, economic, cultural and other aspects*' (2007b: 3, 4). Parr (2004) outlines seven conditions required to define the PUR, namely clustering of centres, an upper limit on centre separation, a lower limit on centre separation, the size and spacing of centres, the size distribution of centres, interaction among centres and centre specialisation.

The basic idea of PUR implies physically and political separated but functional interrelated settlements (Parr, 2004; Turok and Bailey, 2004). Prime examples of PURs include the Randstad in the Netherlands (Faludi, 1994; Kloosterman and Lambregts, 2001; Musterd and

van Zelm, 2001; Lambregts, 2008), the Flemish Diamond in Belgium (Albrechts, 1998; 2001), the Rhine-Ruhr in Germany (Blotevogel, 1998; Knapp *et al.*, 2006), and the Glasgow-Edinburgh region in Scotland (Bailey and Turok, 2001; Turok and Bailey, 2004). Outside Europe, typical examples such as the Southern California metropolitan region in the US and the Kansai area in Japan are mentioned (Batten, 1995). These polycentric urban regions mainly consist of medium or small sized cities. To compete with metropolitan areas and other large economic entities in modern economies, it is said to be necessary to build their functional interdependency for better performance (Van Houtum and Lagendijk, 2001; Turok and Bailey, 2004).

In fact, various concepts present different images of interdependence, such as 'conurbation' (Geddes, 1915), 'dispersed city' (Burton, 1963), 'urban field' (Friedmann and Miller, 1965), and 'network city' (Batten, 1995). The conurbations are the cases of urban settlements that are located too close together while the urban field enlarges the scale of urban living into the inter-regional area. Therefore, policymakers and planners often refer the concept of PUR as an 'urban network'. Nonetheless, Van Houtum and Lagendijk (2001: 751) point out four differences between the concept of PUR and other concepts. First, PUR is in the middle ground between urban interdependence and urban hierarchy theory because the concept of PUR stresses both the importance of horizontal linkage between the members of PUR and the importance of the coalition as central places in a hierarchical system. Second, the concept of PUR is presented as a planning and a *priori* concept, which is based on images of functional integration rather than reality. Third, despite the emphasis on the functional interaction between cities, the physical linkages between urban centres receive much more attention. The fourth difference is the boundaries of polycentric regions are drawn more explicitly and this concept is applied to existing centres.

PUR comprises several existing cities, towns and other urban settlements. The administrative cities or the functional urban areas are often defined as urban centres in this system. Polycentricity at inter-urban scale stresses much more the interaction and network between existing centres. PURs are formed through the increasing important functional linkages between existing cities and towns. Therefore, PURs tend to be formed through the incorporation and fusion mode, according to Champion (2001b). Kloosterman and Musterd claim the difference between centres of polycentric city and polycentric urban regions as well:

*'the shift towards polycentricity in the context of one individual city implies an unfolding of a spatial division of labour where 'new' locations are being developed', while in the PURs, 'the evolving spatial division of labour is interposed and sometimes superimposed upon the existing configuration.'* (2001: 627)

Beyond this, they also highlight the differences in physical form, political entity, and identity. First, transport links and land use patterns in polycentric urban region differ from the polycentric city. More specifically, PUR is characterised by cross-commuting by private cars because of the lack of historical infrastructure and PUR may include a large amount of agricultural and green areas between centres. Secondly, the polycentric urban region including many independent cities involves more than one political entity, which complicates the governance and institutional building. Finally, PUR will develop a new regional identity and blur the rooted local identities of individual cities.

### 2.5.3 The polycentric urban field

Polycentricity can occur at the inter-regional or transnational level as well. The configuration at this broader scale could be termed as 'polycentric urban field' (PUF). This concept is mainly used in planning and policy discourse which reflects the planners' or policy-makers' attempt to apply polycentric logic to a broader region. The 'megapolis' coined by Gottmann (1961) is the prototype of this spatial form, characterised by a densely urbanized area, network of people, goods and information, and a complementary organisation of these spatial components.

Different from the PUR and the traditional polycentric city, PUF often erodes the boundaries of national and regional states. In Europe, the polycentric megalopolis comprising command centres, such as Paris and London together with the adjacent urban regions such as Randstad and Rhein-Ruhr, was predicted to dominate the development of Europe in the 21<sup>st</sup> century as the cities and urban regions would be linked by efficient intra-metropolitan transport and telecommunication system (Kunzmann, 1996). Dieleman and Faludi (1998) regard the polycentric urban field as the 'network of city networks'. They suggested that due to the rapid growth in the peripheral area between the urban regions, adjacent regions like the Randstad, Rhine-Ruhr and Flemish Diamond may become integrated with the less urbanised area between them to develop into one polycentric urban field at the macro level.

To sum up, the variation and key features between these three polycentric configurations are reflected in scales, centres, political entities, evolution processes, and morphological, functional, and strategic characteristics (Table 2.2). Among these aspects, centres are the most essential and fundamental element in polycentric urban system because they are often understood as the '*building blocks for polycentricity*' (Dühr, 2005: 236). Centres in polycentric city are clusters of (any type of) human activities characterised with high density and property values, which can be newly spawn or be formed based on old towns. Centres in other two polycentric configurations are often historical and pre-existing regions, cities, and towns with independent political statues, which are associated together by morphological, functional, or political relation between them. The different definitions of centres lead to the differences in other elements of polycentricity such as boundary, physical linkages, morphological, functional, and strategic dimensions (Table 2.2). Based on previous sections, the differences between these three polycentric configurations are also reflected in the form of agglomeration economies, research topics and research objects. Therefore, polycentricity can be deconstructed into these common elements so that the ambiguity can be diminished. Moreover, it can function as a new definition framework which in turn construct polycentricity with different combinations of these elements.

**Table 2.2 Unfolding three major polycentric configurations**

<b>Components</b>	<b>Polycentric city (PC)</b>	<b>Polycentric urban region (PUR)</b>	<b>Polycentric urban field (PUF)</b>
<b>Scales</b>	Intra urban scale; Intra metropolitan scale	Inter urban scale; Inter metropolitan scale	Inter-regional scale; Transnational scale
<b>Nodes</b>	Subcentres e.g. employment or population centres, and agglomerations of specialised economic activities; Characterised with high density and property values	Functional urban areas or administrative cities	Cities and regions with proximity and common features
<b>Spacing</b>	Continuous or nearly continuous built-up area	Physical separated by green space or agricultural area between centres	The inter-metropolitan periphery
<b>Boundary</b>	Functional areas or daily urban system without clear boundaries including suburbs and commuting hinterlands; Dynamic and evolve with functional linkages	Relative explicated boundaries, usually referring to the planning area or political entity; Dynamic and evolve with voluntary participator	Relative explicated boundaries referring to the planning area
<b>Linkages</b>	Historical public transport, e.g. trams, streetcars, subways	Highways and newly constructed railway or high speed-way	Intra-metropolitan and inter-metropolitan transport and telecommunication system
<b>Evolution model</b>	The centrifugal model	The incorporation model; The fusion model	The incorporation model; The fusion model
<b>Morphologic dimension</b>	Newly developed sites; Old towns	Pre-existing settlements	one contiguous region of very high densities
<b>Functional dimension</b>	Subordinated to CBD; A certain degree of specialisation; Be independent sometimes and rival with traditional centres	High degree specialisation; Cross-commuting and virtual communications like emails, telephone calls	High degree of interaction of traffic, goods and information
<b>Strategic dimension</b>	Match the employment, residence and public services; Ease the problems generated by excessive economic and demographic concentration on old cores; Optimize land use	Increase the competitiveness; Reduce the disparities between regions and urban systems	Reduce the disparities between regions and urban systems; Joint management and governance
<b>Agglomeration economies</b>	technological and pecuniary externalities; Agglomeration diseconomies	regional externalities; network externalities	network externalities
<b>Research field</b>	Theoretical modelling; Empirical identification of centres and evaluation of polycentricity	Policy agenda; Empirical evaluation of polycentricity and performance	Policy agenda
<b>Typical cases</b>	American metropolitan area	European urban regions	American megalopolis; European regions and European Community

*Sources:* Summarized by author

## 2.6 Conclusion and discussion

This chapter provides a comprehensive review regarding conceptualising and theorising polycentricity in the western context. Based on the review, it deconstructs three major polycentric configurations that are most often referred in academic studies and within the planning realm and builds a new framework consisting of key components and features of polycentric development. This framework includes spatial, social, economic, political, and historical elements, which enables the mobility and comparability of this concept across different contexts and scales. It will be applied to Chinese specific context in order to understand the components of polycentricity in Chinese cities. The framework also has potentials to provide insights for building the analytical framework of this research. In this way, the investigation of polycentric development in China can provide more useful insights and can be placed into broader international debates.

There are four key points from this chapter that can inform empirical research about polycentric development in China. First, it is important to consider the development process of polycentricity. The changing macro environment, development trajectories and characteristics in different phases of polycentric development need to be considered (Giffinger and Suitner, 2015). Polycentricity is a spontaneous process caused by techno-economic shift. It appears when a city or region steps into a certain development stage with the transitions of industrial, demographic and infrastructure foundations and shows different characteristics. Substantiated by Batty (2001), polycentricity is an evolutionary process affected by historical factors. Therefore, polycentric urban development should be subjected to a relative long-term analysis including the changing socio-economic and technological conditions as potential driving forces for spatial restructuring in both urban reality and policy discourses.

Secondly, it is impossible to investigate polycentric development only by focusing on a single geographical level or a single dimension with the complicated functional relations and growing scales that social economic activities occur. Polycentricity is a scale-dependent and multi-dimensional concept and these dimensions should be researched mutually interrelated. Cities or metropolitan areas are supported by the functional relations with other cities or regions and further the embeddedness in global networks (Giffinger and Suitner, 2015).



Therefore, in order to better understand polycentricity in China at the intra-city level, the influences of larger urban system need to be included during analysis. In addition, the dimensions that polycentricity refer to and their interrelationships are required to be well investigated.

Thirdly, the specific historical, political, and geographical contexts of China need to be considered to distinguish China's polycentric approach from those in the West. According to the literature review, polycentricity is a broad and fuzzy concept, the explanation of which depends on the spatial, social, economic, and historical elements. The polysemy of polycentricity has been clarified through an assembly of key components and elements. It is found that the key nodes, morphological features, functional linages, the strategic priority constitute the polycentric configurations and these elements vary between polycentric cities, urban regions and urban fields. It is also noteworthy that the research interests and typical cases of polycentric development vary between different geographical and political context, for example between North America and North-west Europe. Research in the US mainly focuses on identification of subcentres and polycentric development at the metropolitan scale, while the European counterpart attaches much more attention to city-region and cross-border region scale and discusses it in policy realm. Cities and regions in China have distinct geographical, political, and historical backgrounds, compared with their counterparts in the US and Europe. Therefore, key elements in the framework, such as scales, key nodes, evolution process, morphological, functional, and strategic dimensions, need to be dealt with more reflectively when applied to China.

Finally, it is more feasible to investigate polycentricity from the policy framework first as it defines nodes, political entity, functions more explicitly. As an analytical tool, polycentricity occupies an intermediate state without a clear baseline to accept or reject it. It is also easily affected by the methods and samples. Since the 1990s, polycentricity has become an important normative agenda at different scales with different purpose (Davoudi, 2003). Theories such as agglomeration economies and urban network provide theoretical foundations for the popularity of polycentric discourse in the policy and planning realm. In next chapter, the application of polycentricity in strategic vision will be discussed in more detail.

## **Chapter 3 Polycentricity in strategic vision: planning and governance**

### **3.1 Introduction**

Polycentricity has been widely used in western planning and policy realm, especially in the European context. This chapter focuses on the planning and governance of polycentric development at a variety scales, which can explain the reasons for the popularity of this concept in spatial planning and the factors affecting its implementation. This chapter first retraces the changing paradigms in urban forms in planning history and the emergence of polycentric urban form as an alternative paradigm. Following that, this chapter links polycentricity with classical planning concepts such as new towns and growth poles, considering their contribution to the formation of polycentricity. Subsequently, it discusses the application of polycentricity in policies and spatial planning, especially in Europe. Underlying meaning and rationality of polycentricity in different territories at pan-European, national, regional or metropolitan levels are examined. Further, the chapter presents the relationship between governance and polycentricity. After that, the spatial identity is elaborated as a bridging concept to bring polycentric discourses and practices together. Finally, this chapter summarizes key conclusions and provides some insights for the research in China.

### **3.2 Changing paradigms in urban forms**

Urban planning was established as a profession to manage urban extension and remodel the nineteenth century industrial city in reaction to the city conditions thrown up by the Industrial Revolution (Healey and Williams, 1993; Breheny, 1996). Desirable urban forms have been key debates in planning theory throughout the planning history. This section introduces the paradigm shift in urban forms that are embedded in urban planning system and discusses the emerging polycentricity as an alternative form to pursue sustainable development.

### 3.2.1 Compact versus dispersed pattern

The growth of industrial city gave rise to the new profession of urban planning. A variety of reformist ideas have discussed the form and function of human settlements with the objectives to addressing urban problems since the late nineteenth century. Several utopian visions of urban forms have been proposed in the historic stages of planning theories which have key influences on planning circles as well as government policy making worldwide.

The first influential paradigm related to urban form is Garden City. At the turn of the 20th century, Howard in his famous book *Tomorrow: A Peaceful Path to Real Reform* promoted the Garden City model and put it into practice through the construction of Letchworth (1903) and Welwyn (1919). The nature of the Garden City is supposedly perfect combination of town and country life, in which all the advantages of the most energetic and active town life combine with all the beauty and delight of the country (Howard, 1898). Howard envisaged the Garden Cities to be well connected to a central city via railways and a green belt would exist between each settlement to prevent towns merging. As Parker (2015: 54) points out, '*Howard was not in favour of a return to low-density village type communities and would even have tolerated the population densities of inner-London for his new Garden Cities*'. Hall (2014: 97, 98) argues that the ensemble of central city and self-contained garden cities formed a polycentric 'Social City' and the Garden City model can be regarded as the prototype of polycentricity.

Since the early twentieth century, the spatial ideology of planning has changed initially because of new building technologies and widespread use of cars (Parker, 2015: 60). Modernist planners searched for 'rational development' (maximum technological efficiency) and asserted functionality over form and newly built forms over old forms (Hirt, 2005). Modernists like Le Corbusier insisted that the new urban pattern needed to favour spaced high-rises and concentrate population in the metropolitan centre and free space for green and open spaces (Hirt, 2007; Parker, 2015: 61). His ideas were then incorporated into the well-known *Athens Charter*, which set the standard principles for modernist architecture and planning. If Le Corbusier stressed the high-density urban pattern, another figure of modernism, Frank Lloyd Wright, proposed a radical dispersed pattern called 'Broadacre City', according to which the old city disappeared and instead a utopian vision of a dispersed, zoned but integrated city was created (Wright, 1932). Although utopias are difficult to be

realised in practice, the key elements such as functional zoning, high density in the city centre and dispersing population have become dominant paradigms in modern planning across the world, especially in the post-war period.

Modern planning theories generally promoted dispersal of human activity as solutions to urban problems (Breheny, 1996; Hirt, 2005). Planning policy is one of the critical factors that caused large scale urban dispersion and sprawl in practice (Healey and Williams, 1993). Yet dispersed urban development implying low-density suburbanisation has led to environment deterioration, social segregation, increased energy consumption and pollution, and city centre decline (CEC, 1990; Masnavi, 2000; Dieleman and Wegener, 2004). The awareness of the limits of nature and the important role of planning strategies and regulatory practices in environmental improvement have led to a new paradigm of sustainable development since the late 1980s with the publication of UN's Brundtland Report (WCED, 1987). The sustainability paradigm requires a holistic consideration of problem solving in economic, social and environmental dimensions, which has been associated with planning and policy (Burton *et al.*, 1996; Wheeler, 2000; Jepson, 2001).

Urban form has significant implications for urban sustainability, particularly its social and environmental dimensions. Sustainable urban form comprises different components, such as land use, building types, transport systems, street layouts, the size of settlements, green space and many other elements (Jabareen, 2006; Masnavi, 2007). Current or post-modern planning ideologies emphasise a return to compact cities in reaction to urban sprawl and promote higher density, more diverse and mixed land use and compact urban form to achieve sustainable development (Healey and Williams, 1993; Burton, 2000; Neuman, 2005; Hirt, 2005).

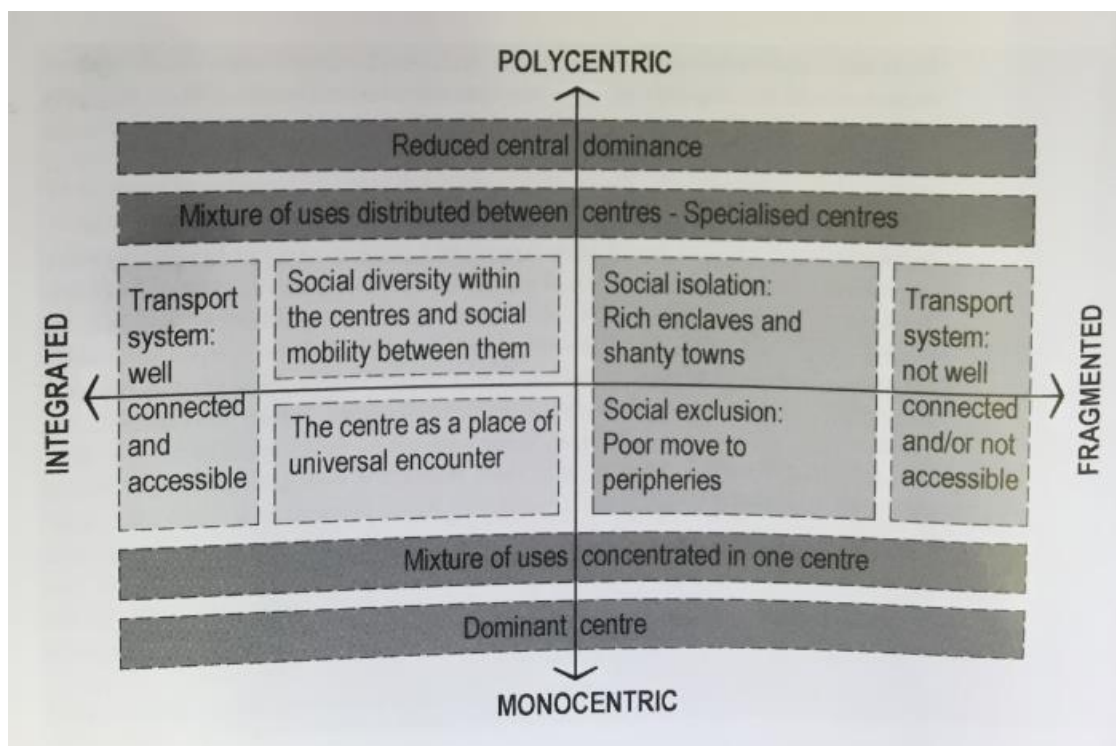
The Compact City model has been translated into new policy and planning initiatives and movement since 1990s. In 1990, the EU published the *Green Paper on the Urban Environment*, which claimed that zoning policy led to environmental problems and advocated mixed use and more intense development as the principles of planning (CEC, 1990). Since then, the concept of the compact city has been incorporated into policy and implemented across the world (Breheny, 1996). In (northwest) Europe, governments attempt to achieve sustainable urban form mainly through the compact city policy and the promotion of the multifunctional land use (Burton *et al.*, 1996). The compact city policy aims at

containing unlimited urban sprawl and reliance on private cars. Across the North Atlantic, the New Urbanism and Smart Growth movements have similar objectives (Dieleman and Wegener, 2004). Compared to the compact city, New Urbanism and Smart Growth advocate the promotion of mixed use at fine grain (e.g. communities, neighbourhoods, and physical design factors like street architecture) and facilitate infill development based on planning and architectural principles (Duany *et al.*, 2000; Grant, 2006). New Urbanism is essentially reminiscent of the Garden City and Neighbourhood Unit theories, all of which integrate reformist ideas and civic values to address urban problems (Garde, 2008). Moreover, these new planning paradigms does not mean a return to a single dense centre. In practice, New Urbanists attempt to improve low density suburbia by introducing these new development principles and regulation (Parker, 2015: 66). Regional thinking was also incorporated to achieve the revitalisation of central city as well as metropolitan sustainability (Wheeler, 2000).

### 3.2.2 Polycentricity: an alternative form towards sustainability?

However, critics have pointed out that the compact city may not always deliver the intentions of the politicians and planners. For example, compactness may lead to less domestic living space, lack of affordable housing, increased crime levels and a worse environment for walking and cycling (Burton, 2000). Moreover, in reality, cities are becoming both centralised and decentralised and evolve towards a wider urban region. Worldwide, cities are converging to the same new model in which new centres are emerging in the process of peripheral growth. The tradition monocentric paradigm is challenged, and instead polycentric urban structures are developing (Berry and Kim, 1993; Healey and Williams, 1993). Evidence has emerged that there may exist an eclectic urban form for sustainable development, which is the so-called polycentric city. It is a typical urban spatial structure which is distinct from both monocentric urban form and unorganised urban sprawl. Polycentric development theoretically has potential to achieve more sustainable forms with the rapid urban growth (Jenks and Kozak, 2013). This spatial pattern is said to be able to benefit both businesses and residents because of agglomeration economies. This model avoids the diseconomy of over-compactness and generates positive externality for the whole urban system.

Different from dispersed pattern, this development pattern stresses both the intensification or consolidation of subcentres and their efficient connection by public transport. Mixed use of land and effective public transport are essential to sustainable polycentric urban development (Figure 3.1). It is an urban form that still stresses concentration, although it may take place both within and outside the older centres (Marcuse, 2013). The polycentric development is appropriately called ‘concentrated’ deconcentration (*ibid.*). The key nodes in polycentric system take form of high-density compact cities. In other words, the polycentric city looks like many compact cities or centres systematically connected by efficient public transport. Therefore, polycentric development inevitably adopts the Transit-oriented Development (TOD) principle, which refers to high-density and mixed-use areas around public transport stops (Cervero *et al.*, 2002). Also, the idea of polycentrism refers to a ‘network’ of interconnected nodes. Thus, not only is the self-sufficiency of centres stressed but also complementarity and synergy between centres.



**Figure 3.1 Sustainable urban form: polycentric and monocentric**

Source: (Jenks and Kozak, 2013: 88)

Polycentric spatial development theoretically can address problems such as congestion, pollution, unbalanced development and uncontrolled urban sprawl but it may also give rise

to some other problems, such as acting as a barrier to interaction and low efficiency. It appears that there are at present no conclusive answers regarding the question of whether polycentricity can be instrumental to achieving economic competitiveness, territorial cohesion and environmental sustainability (Kloosterman and Lambregts, 2007; Meijers, 2008). The effects of polycentricity in terms of three dimensions of sustainability are still ambiguous in empirical evidence, which may partly stem from the different methodological perspectives and from the selection of indicators (see Veneri and Burgalassi, 2012).

### 3.3 Planning and polycentric development

Government policies and planning play an important role in shaping cities via land use regulation and the provision of social infrastructure (Anas *et al.*, 1998: 1459). Planning practices related to polycentricity can be categorised into *planning for* and *planning of* polycentricity. Planning for polycentricity is evident in classical planning approaches such as the ‘new towns’ and the ‘growth poles’, which influenced the formation of new urban centres and hence helped to develop a polycentric spatial pattern. Planning of polycentricity has sprung up in the European spatial planning as an important development principle.

#### 3.3.1 Planning for polycentricity

As mentioned in chapter two, the polycentric urban pattern emerged and evolved over time. A polycentric development pattern typically consists of historic densely urbanised settlements and newly developed centres. Affected by planning theories and the shift of planning paradigms, new towns and growth poles schemes have become important planning policies to fulfil theoretical visions. The cities and regions became polycentric when the new towns or growth poles newly planned in the post-war period became mature. Meanwhile, these planning concepts remain important in current planning practice, and are often associated with polycentric development of cities and regions.

The new town movement was developed from the idea of the garden city. After 1945, the new town programmes appeared in Britain and then were extended to other European countries. New town development became a planning doctrine for the post-war physical and social reconstruction and transformed from a voluntary movement to government policy (Wannop, 1999). Many countries, regions, and municipalities adopted this policy, which led

to a diversity of new town policy. First, the principal purpose of these new towns was not just for population overspill, but also for the objectives of regional economic growth, housing provision and balance of job and residence (*ibid.*). Second, there are four schools of new town policy in Europe: the British one attached to the Howards' Garden City tradition; the Scandinavian-Dutch one related to *the Athens Charter*; the French one more dependent on national and regional planning policy and the Soviet on independent industrial towns (Merlin, 1980). Some new towns were developed by expanding small towns and others were newly created (*ibid.*). This planned expansion and decentralisation can attain the economic and social objectives of a dispersal policy without the environmental impacts caused by scattered development (Echenique *et al.*, 2012). Nevertheless, new towns contributed to the process of counter urbanisation, social polarisation, and socio-spatial segregation of less mobile groups during implementation process.

Another important planning concept contributing to polycentricity is growth poles, which were proposed by Perroux (1955) primarily referring to a set of economic activities linked to propulsive industries (Glasson, 1978). When it comes to the geographical dimension, growth poles are regarded as growth centres which can influence their surroundings (Darwent, 1969; Parr, 1973; Glasson, 1978). The application of growth pole theory involves the selection of planned growth poles or new growth centres. Planned poles generally favour locations with potential for future growth (e.g. sufficient land, interregional transport, existing agglomeration economy, urban amenity, etc.) (Parr, 1999b).

Growth poles can be either spontaneous or planned (Parr, 1999a). A theoretical basis for the adoption of a growth pole strategy in planning is that the rectified spatial configuration regarding settlement size, hierarchical level, frequency and location can exploit existing factor endowment and attract a set of economic activities (Parr, 1999b). This strategy was widely used to solve regional problems including reviving a depressed area, encouraging regional deconcentration, modifying the national urban system and attaining interregional balance (Parr, 1999a). Among these functions, the first is associated with economic development, while the latter three show a potential for the polycentric spatial pattern. The designated new centres modify the spatial structure in the direction of centralised deconcentration to reduce the negative externalities. At the same time, the primacy and hierarchical level of city (region) is reduced by the decentralisation process as the competitiveness of the whole city or region is promoted.



### 3.3.2 Planning of polycentricity

In the late twentieth century, the concept of polycentricity became an important and popular normative goal of spatial planning and the buzzword among spatial planners in Europe (Davoudi, 2003; Waterhout *et al.*, 2005). The planning of polycentricity in Europe sprung up in the context of deindustrialisation, European integration and globalisation (Blotevogel, 1998). It became one of the most important policies of European Spatial Development Perspective (ESDP) published in 1999, in which it stresses the development of a balanced and polycentric urban system (CEC, 1999). The ESDP offered a paradigm change and new perspective as an alternative to the core-peripheral model of the European territory (Copus, 2001; Davoudi, 2003; Meijers *et al.*, 2005). It appealed to the promotion of complementarity, interdependence, and cooperation at once rather than merely transportation links (CEC, 1999). Compared to the traditional welfare or cohesion policies based on redistribution, polycentric development policies are ‘potential-based’ or ‘opportunity-oriented’ approaches, emphasising making use of endogenous potential or creation of new employment (Antikainen and Vartiainen, 2005; Davoudi and Wishardt, 2005).

One of the reasons for the popularity of this concept in planning and policy discourse is that it brings economic competitiveness, social cohesion, and spatial structure together. Economic development, together with social and environment concerns, were the dominant spatial planning issues for metropolitan regions in the 1980s and 1990s in Europe. Cohesion, which is primarily about equity, addresses urban disparities and geographical imbalance, while competitiveness is about strengths and potentials (Waterhout *et al.*, 2005). Polycentric urban form is supposed to generate greater positive agglomeration externalities as well as to facilitate the achievement of social, economic and environment goals (Parr, 2004). The advocacy of a polycentric strategy in Europe is a distinctive approach that rejects the North America acceptance of sprawl, inner city decline, extreme social polarisation and excessively dependence on the car while still enhancing economic competitiveness (Docherty *et al.*, 2004).

Polycentricity in ESDP is a ‘nested polycentric concept’ because the centres mentioned are themselves polycentric systems (Meijers *et al.*, 2005). Since the implementation of ESDP, polycentric development has become a normative framework at pan-European, national, regional, metropolitan and local scales (Brezzi and Veneri, 2015). Even at the same

geographic scale, the meaning or object of polycentric development policies may differ (Meijers *et al.*, 2005). For example, policies in Greece, France and Portugal focus on reducing urban disparities within the urban system while policies in Italy, Poland and Germany address major geographical imbalances within their country's territory. In a relatively well developed polycentric urban system like Switzerland, the Netherlands or Finland, the dominant objective behind polycentric development has become making the country as a whole more competitive; In Austria, Spain and the UK, polycentric development policies can only be found at the regional scale (Waterhout *et al.*, 2005).

This policy framework has been reproduced across the scales and regions (Richardson and Jensen, 2000; Shaw and Sykes, 2004; Gloersen *et al.*, 2007; Dabinett, 2010) and therefore the application in planning practice is subject to multiple interpretations. Even in the same nation, the idea of polycentricity is applied, interpreted and reinterpreted to reflect the certain regional background. Polycentricity could be a concept to promote transnational planning, an organisation tool within a region, an analytical tool, a rhetorical device or a mutual learning platform (Shaw and Sykes, 2004). The differences in (morphological and political) origins determine the challenges the regions face and lead to different concerns and opinions toward polycentrism among policymakers and planners (Lambrechts, 2006; Schmitt, 2013). At the regional scale, the idea of polycentricity has been applied to spatial planning and policies in two kinds of regions in Europe in order to facilitate either polycentric urban region or the polycentric metropolitan regions. These regions differ according to their morphological structure. As Parr (2008: 3022) argues, several Mega-City Regions (MCR) discussed in the POLYNET programme (Hall and Pain, 2006), such as Southeast England, Northern Switzerland, Greater Dublin and Rhine-Main are essentially type of city-regions, while other cases such as Randstad, Central Belgium are of the PUR type considering their size distribution of centres and interurban connection.

PURs in European policies are characterised by a distribution of more or less equally medium-sized cities beyond the economic core of Europe (e.g. the Randstad, Rhine-Ruhr, Flemish Diamond), and the purpose is to increase the competitiveness between cities in the modern economy (Dieleman and Faludi, 1998; Lambrechts, 2006; Turok and Bailey, 2004; Van Houtum and Lagendijk, 2001). The central and federal state planning framework in Germany plays an important role in the formation of polycentric Rhine-Ruhr metropolitan region, which area was first identified as a functional unit in 1993 (Blotevogel, 1998). The

concept of the ‘Flemish Diamond’ comprising Brussels, Ghent, Antwerp and Leuven was invoked in the *Structural Plan for Flanders* in 1997 in the context of shift from a centralised state to a federal structure (Albrechts, 1998). These regions are even larger than the metropolitan area or metropolis, but they need to increase the competitiveness by closer functional connection in order to attract more investment and enhance their position in Europe as well as internationally.

Polycentric metropolitan regions refers to places where there already exists a large urban agglomeration surrounded by several smaller centres (e.g. the Paris Region, Greater Dublin and Greater London plus Southeast England), and the aim is to control unlimited sprawl and combat the dominance of core city (Turok and Bailey, 2004; Waterhout *et al.*, 2005). The polycentric strategy of these regions can be national, regional or local because of their monocentric dominance of both population and economy (Davoudi and Wishardt, 2005; Halbert, 2006). As Halbert (2006) claims in relation to Paris, the strategies at different scales are paradoxical because national policy aims to narrow the disparities between the Paris region and other regions by implementation of redistribution policy, while at the metropolitan level limited decentralisation has happened within the Paris metropolitan area. These regions sustain considerable growth, but they need to ease congestion and protect the natural environment and built heritage by guiding the redistribution of economic activities in order to ease urban problems rather than be concerned with the regional disparities.

### 3.4 Governance and Polycentricity

The reasons for the success of the concept of polycentricity in European spatial planning are also highly related to the changing power structure and interactions between stakeholders. Normative positions and interests at different levels of government and actors are important in shaping the ESDP framework which represents the polycentric discourse (Richardson and Jensen, 2000). Guided by this policy framework, polycentricity has become a key concept at the level of member states and regions because it is promoted as a communication tool of involved stakeholders and a process of discursive integration of European spatial development (Gloersen *et al.*, 2007). The process of changing power relations and knowledge communication between stakeholders regarding polycentricity include both the vertical and horizontal dimensions (*ibid.*: 422). Vertical process refers to the changing

relations between higher and lower levels of government and horizontal process refers to strategic cooperation and competition between regions and between municipalities.

The concept of polycentricity has been used to facilitate the formation of collaborations and networks among municipalities and regions, not only from the perspective of urban form and function, but also with respect to political and administrative dimensions. Because of the ‘subsidiarity’ principle, EU policy actually tends to be implemented at national, regional and the local levels (Stephenson, 2013: 819). For example, Interreg programmes funded by Structural Funds, aims to achieve Europeanisation and regionalisation through strengthening three strands of cooperation, namely cross-border, transnational, and inter-regional cooperation. It has become a channel to disseminate the European spatial development discourse to the regional level and the polycentricity within Interreg community can be reinvented as a strategy for regional empowerment and transnational interactions, which questioned the traditional national hierarchical framework (Gloersen *et al.*, 2007: 430) .

Polycentricity was most often applied at the regional level because of the integration or ‘Europeanisation’ process since the 1990s, which changed the power structure and governance framework. On one hand, reform of the European Structural Funds has placed greater stress on partnership and co-ordination (Stephenson, 2013: 819). Due to funding incentives, governments at the national, regional and local level government recognise the importance cooperation beyond administrative boundaries, which therefore encourages administrative reform and cooperation within or across regional and national boundaries. On the other hand, as a result of the institutional creation of EU, the decision-making power of member states has been stretched up to the supra-national level and down to sub-national level (Marks, 1993). Therefore, the increasing importance of subnational-levels and their links with other tiers of governments should be recognised in the institutional analysis. As the European spatial planning system has become a multi-level system, multi-level governance emerged and is often used as a framework to understand how governance was arranged in Europe (Stephenson, 2013).

Institutional or political polycentricity has become evident due to the proliferation of multi-level governance (MLG). MLG refers to ‘a system of continuous negotiation among nested governments at several territorial tiers’ because of the ‘unravelling’ of the central state (Marks, 1993: 392; see also Hooghe and Marks, 2003). This governance mode deals with

regions that must be recognised and protected or need to be redefined (Fabbro and Mesolella, 2010). MLG has been extended to include non-governmental actors like individuals and institutions. The mutual dependency, communication and interactions between levels are the most important features for MLG (Fabbro and Mesolella, 2010; Stephenson, 2013).

Multi-level governance refers to governance by multiple actors in non-hierarchical modes of interaction and represents an alternative to hierarchical governments. In principle, the benefit of the shift from government to governance is that the governance is much more flexible and, at the same time, can overcome the administrative fragmentation of local authorities. Hooghe and Marks (2003) describe two types of multi-level governance with distinct characteristics but sometimes intertwined. The first type is based on federalism and characterised by general-purpose jurisdictions, limited number of governments and a durable systemwide architecture. In contrast, the second type of multi-level governance is a task-specific governance system with multiple distinct functional jurisdictions at numerous territorial scales. The second type is quite common at the local level for the purpose of production and consumption public goods, while the first type is rooted in regionalism and aims to deal with conflicts and problems in territory (*ibid.*).

Similarly, the multi-level governance structure divides into two theoretical ideal types, territorial and functional governance, according to a series of different properties of institutions including type of actor, legal status, organisational structural, membership, thematic scope, geographic scope (Fricke, 2015: 854). This empirical research shows that several organisations characterised by certain degree of both ideal governance types may exist simultaneously and the characteristics of these organisations play a key role in the coordination and implementation of spatial policy. In Europe, the concept of polycentricity is often applied in transnational and cross-border region spatial planning. Cooperation in these types of regions needs to overcome differences between the political, administrative, and planning systems (*ibid.*: 850). Therefore, the governance of cross-border regions is non-hierarchical, involving multiple governmental tiers and territories.

For the lower scale such as metropolitan or local government, the fragmentation and inter-municipal collaboration is also the key to the governance of metropolitan region or polycentric urban region. The increasing interaction between cities and towns asserts the need for cooperation rather than competition in the development of polycentric urban regions.

Polycentric development is likely to involve a wider range of actors. Davoudi (2007) argues that inclusive inter-municipal coalitions for different functions across a PUR is likely to be more effective than establishment of a single city-region authority due to the dynamic and fuzziness of the boundaries of a city region. In addition, the creation of a new authority is politically sensitive and is likely to challenge smaller local authorities. Lefèvre (1998) summarizes two modalities of institutional arrangements for metropolitan government, the supra-municipality and inter-municipality. The formal institutional framework is also an important factor influencing the regional cooperation and coordination. Adjustments such as new tier of government and the redistribution of competencies can only be implemented gradually and is likely to be resisted by the existing administrative framework (Meijers and Romein, 2003: 179).

Although consensus could, in principle, be easily achieved through cooperation around planning (Meijers and Romein, 2003), the implementation of polycentricity is relative weak. Implementation requires forging synergies and cooperation between multiple actors and multiple interests. However, there is seldom a formal government structure for polycentric urban regions. A fixed or strong regional government may not be suitable for the region or city where multiple actors and diverse functional relations exist. In addition, stronger regional government may lead to lower complementarity within region, as the municipalities under the jurisdiction of a strong regional government may lack functional division while municipalities having more autonomy will forge their own competitiveness through an unique business niche (Cowell, 2010).

To exploit the potential of polycentric urban regions, the building of regional organising capacity is necessary (Meijers and Romein, 2003). Organising capacity is defined as

*‘the ability to enlist all actors involved and, with their help, to generate new ideas, and to develop and implement a policy designed to respond to fundamental developments and create conditions for sustainable development’ (van den Berg and Braun, 1999: 995).*

The governance capacity of a city region is reflected in its ability to construct effective policy within it and to participate in multi-level policymaking (Nelles, 2013: 1353). There are three different schools of thought in terms of city-region governance. The first is the metropolitan

reform school, which focuses on improving the performance of governance through institutional reform and consolidation in order to better encompass the functional region. The second is the public choice school, which argues that the autonomy of several jurisdictions results in efficient public services provision because of certain degree of competition. The third approach is the new regionalism school, which argues that the cooperation could be achieved through a voluntary network of interdependent actors. Nelles (2013: 1359-1362) also argues that civic capital (including the leadership, networks and scale) is the crucial determinant of the strength of horizontal cooperation beyond other two dimensions that are institutional environment and opportunities. Van den Berg and Braun (1999) also claim that the integrated vision of urban development, the formation of strategic networks and leadership are key elements for the organising capacity. Meijers and Romein (2003) argue that the organising capacity of PUR is determined by the spatial economic conditions, political institutional background, and cultural identity.

The intermunicipal partnership could be used as a tool to promote polycentrism, but it can also change the power relation between the central city and the peripheries. Outside the central city, new forms of governance have emerged involving municipalities, chambers of commerce, trade unions and third sectors in small or medium sized cities and towns in order to reinforce the (sub)centrality of peripheral municipalities, which may compete with the central city and contribute to the emergence of polycentricity (Pradel-Miquel, 2015). Sometimes, the intermunicipal partnership is strongly led and supported by central cities for competitiveness in a global economy and therefore the central city has to make concessions to the peripheries to build up the cooperation (Lefèvre, 1998). The limited access to power structures and restricted agenda-setting ability may even create new marginality in a region, especially for in-between spaces and actors beyond the ‘network nodes’ and ‘corridors of connectivity’ within a polycentric city region (Herrschel, 2009).

### **3.5 Spatial identity: bridging vision and reality**

Identity has become an important part in urban experience. It is also employed as an important tool in regional planning and development (Paasi, 2003). Therefore, identity is a key element to understanding the spatiality of places and the regionalisation process in the context of polycentric discourses and practices. Planning visions, policy implementation and

urban reality can be articulated into the framework of spatial identity. However, it is much less discussed in the literature on polycentricity.

The identity in a polycentric system comprises at least two scales, the identity as a whole and the identity of places within it. For the regional or network city planning and development, a common or shared identity is a crucial factor in the shaping of PURs (Kloosterman and Musterd, 2001; Van Houtum and Lagendijk, 2001; Turok and Bailey, 2004). The prerequisite of a PUR is to distinguish itself from other regions, and a clear boundary will be shaped in policy rhetoric and in citizens' consciousness. Within a polycentric system, the cities and their parts should vary in their nature and image (Champion, 2001b: 667). Musterd and Zelm (2001) argue that the size of PUR is too large to be relevant to households and individuals because of constraints on people's experience in time and space. From a household perspective, high quality and distinct identity of places can be used to provide more differentiated and complementary residential milieux in polycentric urban area at more local level.

Regional identity is produced in an intertwined cultural-historical and political-economic context. It is defined as '*a process consisting of the production of territorial boundaries, symbolism, and institutions*' (Passi, 2003: 478). It is formed through the actions '*from above in the form of territorial control/governance and from below in the form of territorial identification and resistance*' (*ibid.*: 477). Van Houtum and Lagendijk (2001) present a regional identity framework of PURs consisting of three dimensions: strategic, cultural and functional. This categorisation reflects a similar principle of classification of regions by Meyer (1963) (see also in Parr, 2008), who divides the region into homogeneous region, nodal region and policy region, based on common characteristics, economic linkages and policies respectively. In this framework, the strategic identity of PUR appears in policy-oriented documents which identify a certain area as a policy region, aiming at improving and promoting an endogenous growth network within region through creating a common perspective. Cultural identity refers to the collective consciousness of belonging and imagination of local citizens for the region. Functional identity means the functional coherence (economic, political or social interconnection and linkages) within the region. Van Houtum and Lagendijk (2001) argue that these three dimensions are interdependent and can explain the process of shaping of PURs.



However, PURs, especially cross-border regions, are proposed by politicians and planners rather than simply based on historical regionalisation processes or homogenous identification process. As a strategic planning concept then, PURs are created by spatial planning, and their regional identities are reformed and rescaled by strategic purposes. As Van Houtum and Lagendijk claim, the (re)production of identity:

*'should be perceived in the context of the subjective interests of dominate actors, such as key politicians and business people, planners, consultants, scientists and local media' (2001: 756) and 'the map and pencil rather than the analysis play a decisive role in the shaping of PURs' (2001: 765).*

The strategic identity of a PUR may facilitate the building its cultural and functional identity to a certain degree. However, one problem is that without the basis of a common identity, the voluntary cooperation and the formation of a common strategy would become impossible. More seriously, a politically manipulated experience would be meaningless due to the lack of support for the cultural and functional identity. Cultural and functional identity can invoke and sustain the shaping of PUR by its grounding in existing reality and by providing new elements such as symbols, images, slogans, believes and new functions. For example, Central Scotland (Glasgow- Edinburgh) region can be counted as a typical PUR when examining its spatial form, while it is two separate city-regions with distinct identities, limited economic interactions and fragmented governance. In terms of identities, these two city-regions lack a shared identity among citizens because of differences in culture, development trajectories and ideas, and lack of interaction of everyday activities (Bailey and Turok, 2001; Turok and Bailey, 2004). Rhine-Ruhr is another example of an urban region with a morphological polycentricity but without a regional identity or regional co-operation (Knapp, 1998). Subregions in this polycentric urban region, such as the Ruhr and the Rhine-axis have formed their own identities, in which process the historical and economic profiles play more important roles than planning imaginaries (Goess, *et al.*, 2016).

Polycentricity is also associated with spatial imaginary and city branding practices in reshaping space and spatial relations (Goess *et al.*, 2016; Granqvist *et al.*, 2019; Wäckerlin *et al.*, 2020). In the polycentric urban region, cities are supposed to distinguish themselves from neighbouring cities and market themselves in specialised and complementary ways (Goess *et al.*, 2016). City branding practices revolve around two different concepts that are

‘brand identity’ and ‘city image’, which jointly shape the identity at the local and regional level (Wäckerlin *et al.*, 2020). Brand identity is the designed and desired image held by local government, which has an impact on the people’s perception and on interventions in physical environment. Place image is associations about a place in the perception of any individuals or group, which influences their spatial practices and participation in policy and decision-making processes. Polycentricity adds a new dimension to city branding for the member cities (*ibid.*). Therefore, the branding process of polycentric regions or mega-cities needs to develop a ‘polyphonic’ brand texture with many distinctly different elements (Ren and Berg, 2014). Different parts of cities have their roles and characters in this overall brand texture in order to achieve a leveraging effect on the city brand as a whole. Co-branding is therefore an important way of creating a sense of inclusion.

Identity of place is determined by both physical form and individual subject experiences, both direct and mediated at a range of scale (Roberts *et al.*, 1999). It can change coincident with the evolution of urban form. With the rapid decentralisation process, attitudes towards the periphery and rural area in a territory have changed. In the post-suburbia discourse, the periphery is no longer differentiated from the urban (Phelps *et al.*, 2010). New urbanity could be discerned and developed in the urban fringe. The urban landscape of the periphery has changed into an amalgam of shopping centres, business parks, theme parks, colleges and up-scale housing, which has been called ‘diffused urbanity’ (Gospodini, 2006). In order to make the polycentric development more ‘liveable’ and ‘integrated’, Robert *et al.* (1999) emphasise the importance of the incorporation of urban design and the creation of new perception of spaces at imaginary level, so that the new subcentres can develop their own identities and support other centres by involving an inclusive network of movement and communication.

### 3.6 Conclusion and discussion

This chapter investigates the application and implementation of polycentricity in the policy and planning realm, based on extant literature about planning history and planning practices in different countries, regions, and cities. It shows that the European Community led the majority of discussion of polycentricity both in policy discourse and in academic research. The debate on polycentricity from the planning and governance perspectives is rather limited in China. Nonetheless, the spatial transformations led from land market reform and

transitional institutions have been thoroughly discussed (Lin, 1999; Wei, 2012). The discussion of polycentricity is often associated with suburbanisation process in China, which is largely influenced by urban planning such as new towns plan (Feng *et al.*, 2008; Feng *et al.*, 2009; Shen and Wu, 2012; 2017). Until very recently, research on the specific topic of polycentricity has emerged (e.g. Cheng and Shaw, 2017). This chapter links polycentricity with sustainable development, spatial planning, territorial governance, and spatial identity based on the debate in western context. Four themes can be drawn that have relevance to the planning and governance of polycentricity in China, which indicate new dimensions that need to be investigated in empirical analysis.

First, theoretical foundations, planning knowledge referred to and local adjustments are important to be included in empirical research, when analysing polycentricity in planning documents. Polycentricity is regarded as a sustainable urban form if the physical and functional connection between nodes are well maintained, in the context of the return to compact urban form and the emergence of regional thinking in the post-modern planning paradigm. Although polycentric urban form can theoretically achieve sustainability, empirical research still has no conclusive views about its performance in this respect. Nonetheless, professional planners still hold the theoretical benefits of polycentric development, which can explain the popularity of this concept in the policy realm to a certain degree. Furthermore, the application of planned theories such as new towns and growth poles (centres) modify urban and regional spatial patterns and contribute to polycentric transition. Professional knowledge in China's planning is influenced by foreign ideas, but local adjustments may result in different interpretations and application of these planning ideas.

Secondly, planning of polycentricity is a policy framework that can be reproduced to achieve multiple purposes, which is not just confined to rational planning based on sustainable discourse. The reproduction process is influenced by the differences in historical, political, and geographical contexts. This point reasserts the importance of historical, political, and geographical contexts in interpreting the polycentricity that has also been mentioned in last chapter. According to the discussion in these two chapters, the concept of polycentricity in the European context is mainly regarded as a normative goal. In fact, polycentricity is a Euro-English term (Waterhout *et al.*, 2005: 163). The ESDP has facilitated the concept of polycentricity in Europe since the 1990s. Polycentricity has been applied in spatial planning at the pan-European, national, and regional level, but the notion of polycentricity has been

reproduced in different countries and regions according to different political, functional, and morphological conditions. Common identity of history and culture, existing political-administrative frameworks and the proximity of moderate size cities encourage more attempts to form polycentric urban regions in policy realm (Salone, 2005). However, polycentric strategies are often non-binding and is mainly achieved through programme-based or incentive-based approach (Waterhout *et al.*, 2005). In North America, polycentric urban development is driven by the market forces of land, commercial and residential property markets, mainly without planning or with micro-planning by the private sector, especially in the peripheral area (Hise, 1997; Phelps *et al.*, 2006). Based on western experience, it is evident that the distinct political system, planning approach and the particular history and geography of China will lead to the reinvention of polycentricity whose progress will be similarly influenced by planning and market forces but in different ways to the West. Therefore, political purposes underlying the reinvention of polycentricity and the influences of historical, political, and geographical contexts need to be further interrogated in China.

Thirdly, power structures and interaction between stakeholders play critical roles in discourse formation and implementation of polycentric development strategies. In Europe, multi-level governance and polycentric governance modes, based on flexibility, partnership, and voluntary cooperation network, have transcended traditional hierarchical government in plan-making process and implementation process, which is one of reasons for the success of the concept of polycentricity. The implementation of polycentricity requires forging synergies and cooperation between multiple actors and multiple interests. Moreover, new forms of governance may also reshuffle existing power relation and spatial relations. Again, the differences in political and planning system also lead to differences in governance mode in terms of polycentric development. The governance in Europe is often in the form of multi-level governance including supranational, national, regional, and local level, and the public sectors play a key role in the cooperation and interactions between different authorities. For the US, there exist many local municipal governments within a metropolitan area, and therefore the institutional fragmentation lead to many attempts to metropolitan consolidation to facilitate cooperation and partnership (Lefèvre, 1998). A big difference is that governance change in the west arises out lengthy manoeuvrings among multiple parties whereas in China change is more at the behest of powerful state actors. Therefore, exploring the changing

relations between state actors and innovation in governance modes is helpful to understand the making and implementation process of polycentric strategies in China.

Finally, spatial identity is a useful concept that can bring planning vision and urban reality together. Identity of polycentricity consists of different dimensions that are held by different agents such as government authorities or by individuals. These dimensions are interdependent and interactive. This thesis aims to investigate both the policy making and implementation and thus needs to investigate both the image in planning vision and identity in urban reality. Chinese cities have experienced ‘restless’ urban development and have been characterised by diversified urban landscapes (Shen and Wu, 2012; Wang *et al.*, 2016). The identity of urban space and urban system is becoming complicated in this process. The changes in spatial identity are an important indicator to reflect the polycentric transition and the success of policy implementation. The influences of politics, function, and physical form on reshaping identity need to be considered. Moreover, identity in a polycentric system comprises the identity of a city or region and the identity of places within it. Inspired by this, this research will investigate the identity of the case city first and then investigate identity of specific parts in much more detail regarding to polycentricity.

These conclusive discussions in chapter 2 and 3 are crucial to better understanding of polycentricity in China. It is necessary to build an analytical framework to articulate all these points. In next chapter, a new epistemology of space/structure will be introduced. Based on that, a novel theoretical framework will be built that includes all these elements.

## **Chapter 4 Theoretical framework and methodology**

### **4.1 Introduction**

This chapter borrows from the post-structuralist research on space to construct a novel theoretical framework. The new framework resonates with the literature discussion in previous two chapters and it also determines research design and methodology of this research. This chapter first provides a theoretical perspective to understand urban space and the politics of space. Following that, it constructs a theoretical framework to explore polycentricity in China. This framework aims to address research questions in a systematic way and facilitate a better understanding of polycentricity in China from a spatialised political economy approach. Subsequently, this chapter discusses research strategy and research methods and justifies their rationale and provides a detailed information about data collection and analysis process.

### **4.2 A new epistemology of urban space**

According to the discussion in chapters two and three, polycentricity has been researched in multiple disciplines and from different standpoints. This research aims to investigate the application in planning and implementation in practices regarding polycentric development in China. Therefore, it is necessary to build a new epistemology of polycentricity to better understand the policy making as well as policy delivery. The spatial triad of Lefebvre (1991) and debates on politics of space are referred in this section. In this way, a new framework that bridges policy discourse and implementation, integrates vision and reality, links power, knowledge and space together can be developed.

#### **4.2.1 The production of urban space**

The concept of space is derived from philosophy and mathematics (Lefebvre, 1991). Space was traditionally regarded as absolute space and it was studied in geography from the ‘chorological’ perspective in 19<sup>th</sup> century and early 20<sup>th</sup> century, which showed high interest in collective existence or phenomena in space, the law of spatial distribution and spatial forms (Hartshorne, 1958). Since the 1960s, space has become a focal point of social science.

Traditional opinions, that regard space merely as an evidence of senses, a passive locus or container of human activities and social relations, were subject to critiques because non-material factors, such as politics, society and culture were ignored.

Drawing on the work of philosophers such as Hegel, Nietzsche and Marx, Lefebvre proposed a new way of thinking about space and social change in his book *The Production of Space*. Lefebvre argues space and the social are intertwined and inseparable, and further proposed the core idea that '*(social) space is a (social) product*' (1991: 26). In this theory, space is regarded as both the (social) product and producer of social dynamics during the process of production and reproduction.

The Production of Space is a unitary theory of physical, mental and social space. A conceptual triad has been proposed by Lefebvre to reflect the ontology of space. The spatial triad comprises three distinct but inherently related parts: (1) spatial practices, (2) representations of space and (3) space of representation/representational spaces (Lefebvre, 1991). Lefebvre also uses the terms 'perceived space', 'conceived space' and 'lived space' to refer to this triad and points out the trialectical relationship within it (Lefebvre, 1991). The first set of parts above represents the epistemological dimension and the latter set of parts set the phenomenological dimension of the spatial triad (Schmid, 2008).

From a Lefebvrian perspective, spatial practices are associated with perceived space between daily reality and urban reality, which is directly related to materiality. Representations of space means conceptualised space or conceived space, which are linked to the relations of production and to the production of knowledge. Lefebvre sees the representations of space as the 'order' of space which is '*the space of scientists, planners, urbanists, technocratic subdividers and social engineers*' (1991: 38). This space is the dominant space in any society or mode of production, which is employed to generate the 'abstract space' through the process of conception. Representational space refers to the lived space of 'inhabitant' and 'user', which is a dominated and passively experienced space where the imagination seeks to change and appropriate it.

Distinguishing the three spaces is fundamental to understanding the spatial triad, but it offers various interpretive possibilities. Elden (2004) argues that perceived space is physical and material space, while conceived space is imagined and constructed by mental processes, and

lived space is modified and altered by everyday life. Merrifield (2013) claims that social space is concealed in spatial practices that facilitate social functioning. Representation of space is a mental and abstract space embedded in power and ideology while representational space is related to the body and is an imagined space by 'inhabitants' and 'users' (*ibid.*). Harvey (1989) claims that spatial practices take on their meaning under specific social relations and 'get used' or are 'worked over' in the course of social action. He adds other spatial dimensions such as 'absolute space', 'relative space' and 'relational space' to Lefebvre's spatial triad and builds a matrix of specialities, which emphasises not only political and economic power but also symbolism and meanings during the production of space (Harvey, 1989; 2006). Soja (1996) highlights the importance of representational space and regards representational space as social space and terms it the 'Thirdspace' to differentiate it from mental space and physical space.

The concept of 'the production of space' shifts the research interest in social science from production (of things) in space to the production of space itself (Merrifield, 2013). As a typical form of social space, urban space is a central concern of Lefebvre. As Lefebvre (1991) notes, urban space is at the centre of human activities, which reflects a dialectic of centrality and is filled with conflicts and contradictions. From Lefebvre's perspective, urban space functions as (1) the material means of production; (2) a consumption objects; (3) a political instrument; and (4) the instrument of class struggle. Urban landscapes and structures have been reshaped by political and economic elements, such as capital, power and class.

Lefebvre's theory provides an important perspective to explain the phenomenon and problem of rapid urban expansion, pervasive urbanisation and spatial organisation. His epistemological framework of (urban) space is useful for urban studies and planning research as it is instrumental to constructing a research framework. For example, Lennon and Moore (2018) formulate a new framework for examining the micropolitics of the production of space by extending the theory of Lefebvre. He and Lin (2015) borrow from Lefebvre's spatial triad to build a state, market and society triad to explore the production and usage of new types of urban spaces including edge cities, urban villages and mega projects in China. They also suggest the importance of using this triad to investigate the social, political, and economic forces in production of polycentric urban landscapes in China.



#### 4.2.2 The politics of space

According to Lefebvre's theory, space is essentially a political product and politicised in the production and reproduction process. Urban space is filled with conflicts and contestations between the state and society, between state and capital, and between states at different scales. These conflicts revolve around two key themes 'abstract space' and 'differential space', representing the exchange value and use value of space respectively (Lefebvre, 1991). 'Representations of space/conceived space' is interwoven with the abstracting process that generates abstract space, and 'spaces of representation/lived space' is tied to the process through which differential space is generated (Lennon and Moore, 2018). From the logic of capital construction and circulation, space can be produced, consumed, distributed just like the other means of production (Lefebvre, 1991). Abstract space is therefore produced and regulated by the modern state in order to sustain the rational economic circulation in the sphere of production and facilitate the state control and manipulation (Brenner and Elden, 2009). 'Differential space', which reasserts the use value and differences, challenges and resists the abstracting forces in capitalist rationality through appropriation and symbolic interaction (Lennon and Moore, 2018).

Space is not just the container in which politics takes place, but it is also the medium and outcome of contests and struggles. Politics as well as other social relations are articulated in the production of abstract space and differential space. Therefore, the politics of space is reflected in the process of production of space by state regime politics and in the process of resistance by everyday spatial politics. Space in general but abstract space in particular is the '*political product of state spatial strategies of administration, repression, domination and centralised power*' and both institutional arrangement and political imaginaries are reshaped in the production process (Brenner and Elden, 2009: 359).

This thesis mainly focuses on the relatively dominant and privileged power in the production of space that is termed state power. Studies of the politics of space in this formal form analyse the process of capital accumulation (Harvey, 1978; 1981), the reconstitution of power relations in new form of governance (Logan and Molotch, 1987; Stone, 1989; Macleod and Goodwin, 1999) and the politics of scales (Delaney and Leitner, 1997; Brenner, 2000; Ward and Jonas, 2004). Harvey (1978) formulates the circuits of capital flow to explain why new space is continuously produced so as to sustain the provisional stabilisation of capitalist

urbanisation. Space becomes the new surplus value when the surplus value created by labour and materials in the primary circuit have reached their limits (over accumulation). As Harvey points out in his time-spatial fix theory, the huge amount of capital investment in fixed assets (thereby reorganising the geographical landscape and form) is the main approach to facilitate the circuit of capital and thereby to temporarily solve the contradictions through geographical expansion of production and consumption (Harvey, 1981). Due to the decentralisation of state power and the shift from managerialism to entrepreneurialism, the role of local economic development in urban politics and urban space governance has been stressed (Harvey, 1989). Municipal governments became more powerful and they undertake the responsibilities of economic development, the provision of public service and infrastructure construction (Painter, 1995). New forms of institutional arrangements on urban development have emerged in this process such as the emergence of alliances of key interest group and the growing influence of private sector (Macleod and Goodwin, 1999). The 'growth machine' (Logan and Molotch, 1987) and the 'urban regime' (Stone, 1989) are two of most influential perspectives to achieve new mechanism of policy development and implementation.

However, governance theories such as these failed to integrate the influences of national state and failed to problematise the issue of scale (Macleod and Goodwin, 1999). Since the 1990s, questions of scalar organisation and the process of rescaling have become the central focus of urban and regional research in the context of globalisation and multiscale state restructuring (Brenner, 2000). Therefore the production of space/politics of space has extended to the production of scale and the politics of scale (Delaney and Leitner, 1997; Brenner, 2000). In these accounts, scale is not a pre-given geographical concept, referring to bounded spaces such as the local, regional, national and global, but it is socially constructed in the process of political, economic and social restructuring (Delaney and Leitner, 1997). Similarly, scales have become both containers, media, and outcomes of socio-political contestation and struggle (Brenner, 2000). Spatial rescaling has become a part of political strategies in coping with the crisis of Fordism, dealing with conflicts and struggles, and reshuffling power relationships (Swyngedouw, 2000; Brenner, 2000). City regions that constitute vital sites for rescaling process, are produced in order to manage conflicts and struggles in particular circumstances and to forge political alliances or partnerships within and between cities and regions (Ward and Jonas, 2004; Healey, 2006).

State planning, or rather ‘spatial policy’ is also one of the major focuses of Lefebvre’s account of the politics of space (Brenner and Elden, 2009). Space is continuously shaped and reshaped through various types of spatial strategies. Although planning professions entail a body of knowledge with an empirical base and often use scientific and technical approaches in order to claim that its methods and philosophy is objective and neutral, the spatio-temporal programmes and plans are essentially political processes just as their core object, space, is political (Lefebvre, 1976). The apparatus of official planning represents the mobilisation of knowledge and technical expertise for the purpose of abstraction (Lefebvre, 1991). In this sense, modern planning policies are used as tools to legitimise the action of state (control and domination) and the action of capital (abstraction and circulation) (Dear, 1986).

Lefebvre (1991: 3, 4) also refers to the work of Foucault to stress the instrumentality of knowledge. From a Lefebvre perspective, representations of spaces are produced with the help of knowledge and expertise. From a Foucauldian perspective, knowledge or discourses are competing sets of ideas, which can serve power but also challenge power (Foucault, 1972). Although Foucault’s discourse theory is most often applied to micro-politics, it is also helpful for this research. The dialectical relationship between power, knowledge and space helps reshape Lefebvre’s spatial triad. More importantly, it offers a methodological insight, which will be discussed in following section.

### 4.3 The construction of the theoretical framework

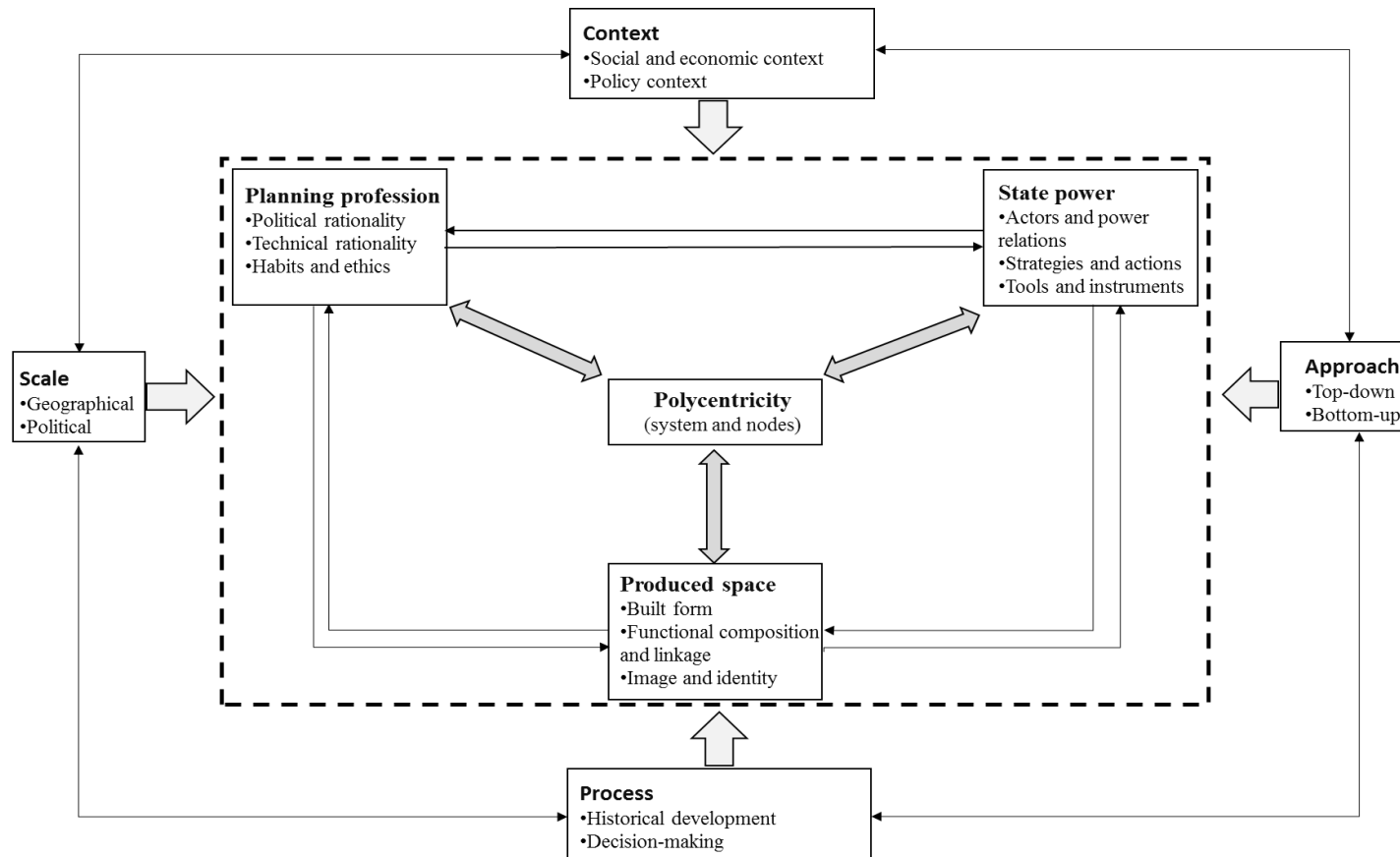
This research aims to answer two interrelated questions, as introduced in chapter 1. The first is what underlying meanings and rationality of polycentric urban development in the policy and planning discourse in China are. To address this question, polycentric discourses, power relations and polycentric space/structure are required to be critically interrogated. Second, this research asks how concrete centres in the polycentric system are created, governed, and materialized to facilitate the implementation of polycentric policies. Polycentricity is regarded as ‘a system of centres’ in this research. Therefore, this research analyses the polycentric system as a whole first and then selects specific places within the case study city. Drawing on the conclusive discussions in chapter two and three and the politics of space theory above, a novel theoretical framework is developed, which provides guidance for the

methodology and empirical analysis. The framework is applied to both the systematic analysis and detailed investigations of specific centres (Figure 4.1).

The key components are state power, planning profession and produced space which appear in the core of the theoretical framework. These components have dialectic relationships and they together co-produce polycentric structure/space. (1) **State power:** Polycentricity in the policy realm is politically constructed as the result of interaction between key actors and stakeholders. These actors include the multiple levels of governments, actors within and between government departments or organisations, and quasi-government actors such as state-owned and state-influenced developers. Their interests, capacity, tools and instruments are key dimensions of state power. (2) **Planning profession:** This element represents the main source of knowledge and discourses about polycentricity. The planning profession masters the knowledge and technical expertise about the spatial arrangements and organisation, which is informed by planning theories and concepts. Planners pursue a polycentric spatial pattern and create polycentric discourses to form an instrumental space. Their dominant discourse and its composition are related to political and technical rationality. In addition, the professionals' personal habits and their awareness of professional ethics play an increasingly important role in the final output. (3) **Produced space:** This component comprises both physical space and urban experience. The morphological and functional characteristics are important dimensions for polycentric development. The state power and planning profession generate impacts on the built environment, the perception and identity of space.

The framework in Figure 4.1 also highlights the contexts, scales, processes, and approaches to achieve a better understanding of how the polycentric development takes place in China. These four elements are drawn based on the extant literature and frame four analytical aspects or objects that specific attention should be paid to. (1) **Context:** The politics of space is not isolated from the territorial and historical context. The vision of polycentricity is subject to different interpretations and objectives. Therefore, the development stage of the city and macro policy ideology influences the form of polycentric development. (2) **Scale:** Scale here refers to both geographic scale and political scale. On one hand, the geographical scale is pre-determined by the political and administrative system and it provides an important site for the exercise of power. This research identifies different geographical scales and distinguishes the scale at which the polycentricity has been applied. On the other hand,

‘scalar flux’ implies that these geographical scales are redefined and reshaped for special purposes or because of the changing socio-economic relationships. The rescaling strategies which significantly influence the relationship between power and space are identified as critical events in the empirical analysis. (3) **Process:** This research is process-oriented, which retraces the development process and decision-making process at the same time. (4) **Approach:** According to the literature, polycentric development is a mixed process of top-down and bottom-up mechanisms. It can be either proposed or facilitated by policies and planning or emerge spontaneously in urbanisation and regionalisation process. To identify approaches is helpful to understand spatial logics and outcomes of polycentric development, especially for the creation and development of specific nodes within the polycentric system.



**Figure 4.1 An analytical framework to understand polycentricity in China**

Source: Produced by author

## 4.4 Research methodology

This research interprets polycentricity through a constructivist approach. That means it admits the ‘subjective rationalism’ of planning and supposes that the planning and development process is a power-laden process in China. While the plurality of understanding and different perspectives on polycentricity are acknowledged, this research does not attempt to reject the ‘objective truth’. The scientific and technical explanations as well the changes in terms of material space were also investigated to understand the dialectic relationships between power, knowledge and space in discursive formation and implementation process. The aim of this research was achieved through an embedded case study approach combined with using multiple qualitative data and strategies.

### 4.4.1 Embedded case study

According to the literature, polycentricity is essentially embedded in a process of urban development and policy making. In-depth and longitudinal research is of greater value than mere measurement or description. This research attempts to achieve a transformation from structural to processual understanding. It needs to investigate the evolution of urban form, the changing macro socio-economic environment and the political process involving critical actors, all at the same time. Therefore, both the temporal dimension and contextual conditions need to be considered. A case study (of a specific city) can involve a combination of these two dimensions (Bryman, 2015).

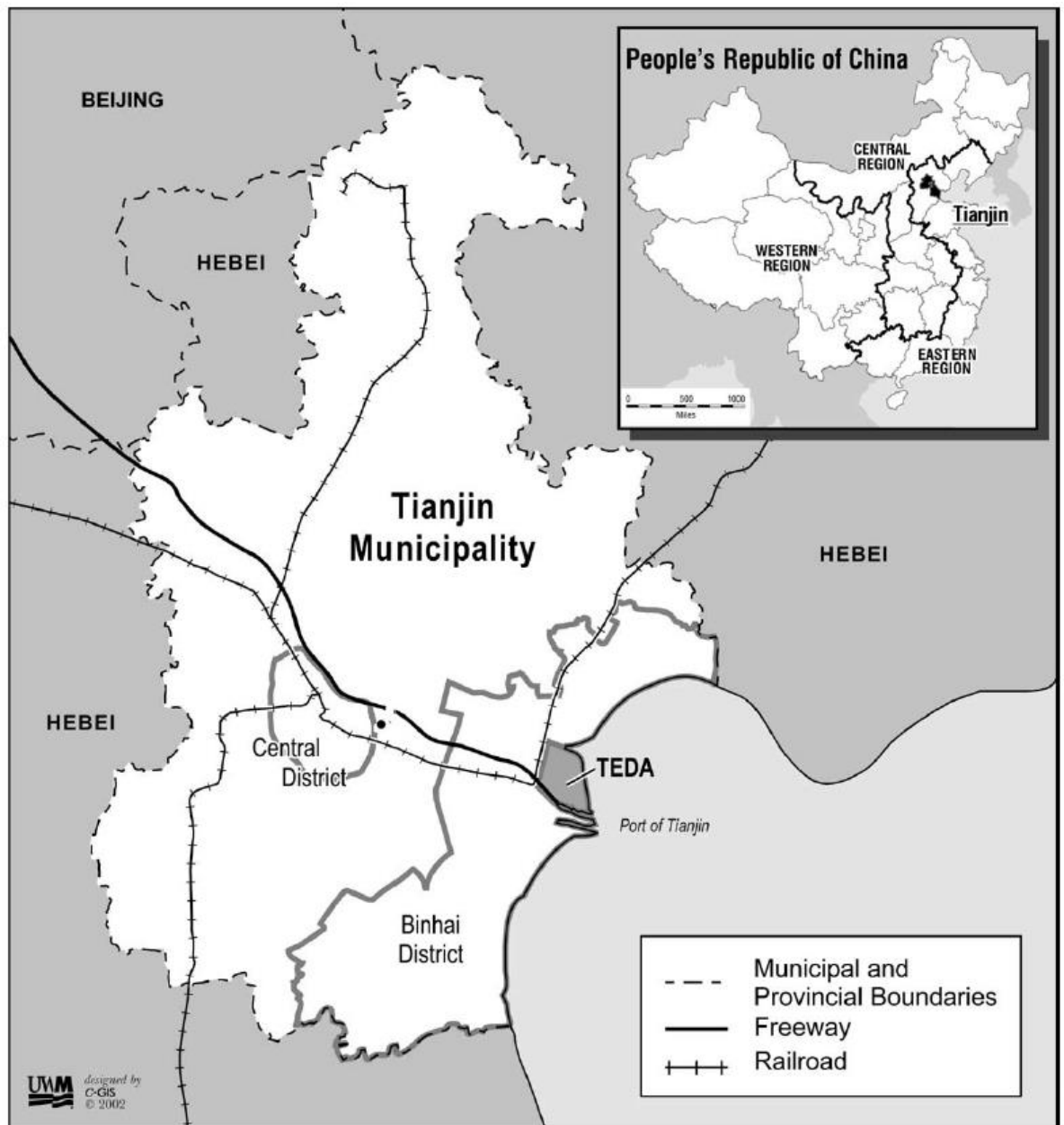
Case study strategies have been widely adopted in research in many disciplines. The design of holistic or embedded, single case or multiple case are two crucial distinctions for case study research (Scholz and Tietje, 2002). This research is designed to adopt the embedded case study approach. Embedded case study includes multiple units of analysis on different levels, which is appropriated for knowledge integration and synthesis (Scholz and Tietje, 2002; Yin, 2013). The overall case in this research is the case study city as a whole system. Following a comprehensive account of the evolution of polycentric system in planning vision and urban reality, typical centres within the polycentric system were analysed as smaller units, which allows the in-depth analysis within limited time and resources. Finally, the knowledge acquired from this two-level analysis was integrated into the main case level to answer the twofold research questions. Another significant advantage of case study design

is that it can draw upon various types of data and analysis methods (Yin, 2013). More specifically, the data (documents, interviews, and statistics, etc.) and data analysis methods (statistical analysis, discourse analysis, spatial analysis, etc.) can be involved in one case.

The city of Tianjin was selected as a single case according to both validity and pragmatic considerations. As polycentricity is a context-sensitive theory and this research adopts a constructivist approach, Tianjin is not used as a representative case, although similar logics and approaches might be encountered in other Chinese cities. Tianjin satisfies five main conditions as follows. First, the polycentric concept should be embedded in the local planning ideas and policies in case study city. Second, the case must possess a polycentric urban form or show a significant polycentric development trend. Third, the case study city is better to be embedded in a wider regional and global network so that it is influenced significantly by actions at a larger scale. Fourth, the case is better to be characterised by the features such as rapid urban expansion and growth both in economic and population, where significant adjustment about urban form can be identified. Last but not least, the selection of the case should also be based on pragmatic considerations. In this case, cooperation with Nankai University in Tianjin facilitated the field work and data collection, and the researcher also had familiarity with Tianjin from his earlier work as planner.

Tianjin is one of the most important manufacturing and port cities in North China. After Beijing and Shanghai, it is the third municipality of China under the direct control of the central government. Municipalities in China are cities with greater importance in politics and economic development. They are parts of the highest-level Chinese administrative divisions at the same tier as provinces. Located along the west coast of Bohai Gulf and in the north-eastern extremity of the North China Plain, Tianjin is surrounded by the Hebei province and Beijing municipality (Figure 4.2). Beijing, Tianjin and Hebei together form the third largest economic region or urban cluster. Historically, Tianjin's development was always highly influenced by Beijing and recent regional policy focussed on the Beijing-Tianjin-Hebei Region, which has become of national significance, is expected to generate new influences.





**Figure 4.2 Location of Tianjin**

Source: (Wei and Jia, 2003)

Since China's Open-Door Policy, like many other eastern and coastal cities, Tianjin has experienced dramatic urban growth and spatial transformation. However, Tianjin has received far less attention from scholars than other large cities in China, such as Beijing, Shanghai, and Shenzhen. Nonetheless, Tianjin has shown its speciality in terms of spatial development. The spatial structure of Tianjin has been reconfigured because a secondary city took initial shape on its southeast coast. In the planning realm, the development of the Binhai New Area was promoted so that it became a 'twin city' with the old city core.

Moreover, other new centres and policy enclaves have been continuously proposed in recent plans. In sum, the polycentric transition in Tianjin is prominent in the planning discourse and reality.

The embedded smaller units/cases were determined in the process of analysis. There are three criteria for identifying them. First, the embedded cases are required to be explicitly identified as the key element of polycentric discourses of Tianjin. Second, these selected smaller cases are supposed to have greater political and economic significance. Third, these centres need to be recognised by key actors and interviewees. The results of selection are introduced in chapter 6, 7 and 8 in more detail.

#### 4.4.2 Data collection and analysis

Theoretical propositions guided the data collection and the analysis process. The theoretical framework demands that attention should be paid to the power relations between key actors, and to changes in planning discourse and in material space under certain conditions. Therefore, the research contains both secondary data and primary data, which are highly complementary.

Secondary data used in this research include (1) policy and planning documents, (2) official publications about history of urban construction and planning in Tianjin, (3) internal planning consultancy reports, (4) official statistical yearbooks at municipal and district level and (5) online resources from government official website and public media. These documentations provide substantial information about local history, chronicle of events, planning making process, institutional arrangement, development strategies and key development projects.

First-hand data were obtained via semi-structured interviews. Interviews with heterogenous research participants informed policy context, decision-making process, planning practices, governance mechanisms, underlying rationality, driving forces, development process and place identity. This type of data was complemented and cross-checked by documentary data, and it also used to complement secondary data when the discourse analysis was carried out.

The two types of data were analysed in different ways in empirical chapters that aim to answer different part of research questions. To answer the first research question, this research adopts discourse analysis. The texts in planning documents were the main object of analysis, but the other objects in discourse analysis were beyond the text which were analysed based on interview data and other documentary data. The second research question was addressed mainly based on primary data such as interviews and site survey but still complemented by documentary information. Therefore, the research methods this research employs include discourse analysis and semi-structured interview. The details of theoretical roots, data collection and analysis techniques are discussed as follows.

### *Discourse analysis*

Discourse generally refers to the aggregation of written or spoken communications. However, scholars use the term ‘discourse’ in a range of meanings. As a contested term, it is impossible to impose ‘a one size fits all’ definition to discourse, even though, Hastings (1999) still highlighted two key dimensions to this term. In linguistic definition, ‘discourse’ can be used to refer to either a single instance or event of language use, or groups of utterances or texts which originate or belong to a certain social domain. Hastings (2000) also identifies an insightful way of understanding discourse and discourse analysis propounded by Van Dijk (1997: 3), in which the ‘discourse’ is simply defined as ‘language use’ and ‘discourse analysis’ as *‘the study of talk and text in context’*. The emphasis on textual and contextual analysis has led to a restricted view of the nature of policy process, which make the policy lose its dynamic, conflictual and processual characteristics (Hastings, 2000). Therefore, Jacobs (1999) argues for the need to understand both text and practice to solve this problem.

Spatial planning research, which is influenced by disciplines such as geography and cultural studies, has begun to highlight the role of discourse (or language) and to incorporate discourse analysis into the policy process (Richardson, 1996; Healey, 1999; Richardson and Jensen, 2000). In recent years, it has been deployed as a methodology to understand the process of urban policy and planning making and implementation (Jacobs, 2006). It is worth noting that there exist various and different theoretical and methodological approaches. Nevertheless, these approaches are all grounded in the philosophical discussion of the relation between language and reality. The common features of these approaches are that

they highlight the role of language in policy and planning realm and understand the world from a social constructivist epistemology. Language is not only a representation of an underlying reality but is also constitutive of social actions.

According to different theoretical roots, Richardson (1996) categorises the theories and analysis of discourse that applied to policy and planning analysis into two camps, broadly Habermasian and broadly Foucauldian. Lees (2004) identifies two distinct strands of discourse analysis in urban research, namely political economy informed analysis and Foucauldian-inspired research. Based on Lees' argument, Jacobs (2006) argues some other variants of discourse-based research fall outside this typology, such as discursive psychology, which mainly focuses on the interpretation of interview or conversational data. Generally, discourse analysis in policy and planning realm can be polarised into two groups, text oriented discourse analysis and Foucauldian approach according to the definition of discourse (Sharp and Richardson, 2001; Xu, 2016). The analysis of former discourse consider discourse textually, while the latter one is mainly based on the broader Foucauldian view about power and knowledge. However, in many empirical studies (e.g. the special issue in urban studies, 1999), both approaches show a concern to the inequalities of power, though the differences indeed exist in what the power refers and the means through which change can be achieved (Sharp and Richardson, 2001). These two distinct approaches indicate a collision of philosophy between modernity and postmodernity, a discourse between idealized consensual and antagonisms, a theory ground between communicative rationality and power relations (Jensen, 1997; Richardson, 1996). These two approaches have overlap to some extent, and the clarity of the differences between them can inform scholars the theoretical bases and the techniques of analysis.

Text-oriented discourse analysis focuses on how language is used in particular settings and contexts and what implications and effects are made through discursive practices. For example, in critical discourse analysis, Fairclough (1992; 1995) proposes a dialectical relationship between text and social practice and provides an explicit analytical framework including text analysis, discursive practice and social practice for discourse analysis. Critical discourse analysis primarily focuses on the real social and political problem rather than the mere study of discourses outside the wider context (van Dijk, 2015). Texts as elements of social events are productive activities produced by agents, who draw on social structure and social practice when producing them (Fairclough, 1995). Texts are produced in given time

and place and intertwined with other elements of social practices, such as social relations. Thus, discourse analysis allows scholars to incorporate elements in the context into text analysis. The detailed text analysis (e.g. the analysis of genre, styles, vocabulary, rhetorical mode) can help provide new insights about understanding the reality.

Power, hegemony, ideology and inequalities are typical terms belonging to the macro-level of analysis in critical discourse analysis (van Dijk, 2015). Critical discourse analysis focuses on *'the way discourse structures enact, confirm, legitimate, reproduce, or challenge relations of power abuse (dominance) in society'* (ibid.: 467). In this approach, discourse is employed as a tool or instrument of power control and hegemony. A discourse coalition that refers to a group of agents who shares a common social construction (Hajer, 1993) can be formed in this process. That means a policy agenda can be achieved through integrating the dominate power into the laws, rules, norms, or even ideal consensus.

In terms of the consensus, the dominate actors attempt to impose their discourse on others through persuasion or the exercise of power (Hajer, 1993). Discourses are seen as 'system of meanings' and a rational and democratic consensus between plural discourse can be achieved through good communications (Healey, 1996; 1997). According to this approach, the different interests can be articulated into one acceptable agenda and the power relations are regarded as a prior. In addition, this Habermasian approach based on communicative action is discourse of critical rationality (Richardson, 1996).

Foucauldian discourse analysis draws on post-structuralist theories, particularly on the work of Michel Foucault. Discourse, power and knowledge are key concepts and consistently argued in Foucauldian theory. For Foucault, power is ubiquitous and insidious masked as forms of truth and knowledge (Foucault, 1980; 1990). There is no ultimate truth and language is not mere a representation of 'reality', instead it play an important role in establishing the 'regime of truth' (Foucault, 1980). The language, power and knowledge are interconnected through discourse (Foucault, 1972; 1977). 'Regime of truth' can determine the formation of social problems and the solution to address them selectively, which can be conceptualised as an outcome of power struggles.

In this approach, discourses are interpreted as a combination of different elements of text, a set of competitive ideas and values, and a system of actions (Hajer, 1995; Sharp and

Richardson, 2001). Different systems of meaning or discourses compete for influence and impose their ideas and identity to other discourses (Sharp and Richardson, 2001). Contradictions and conflicts between these discourses are linked to power so that the structural changes in society can be viewed as a shift of relative influence of discourse. Therefore, Foucauldian approach tend to adopt a historically based analysis to understand the shift of discourse through which power is exercised (Jacobs, 2006).

Compared to the text-oriented approach, Foucauldian approach challenges the assumption of pre-given identity of actors and argues that power can both construct and undermine identity position (Jensen, 1997; Lees, 2004). Another significant difference is that both rational and irrational arguments can be 'truth' through the exercise of power and the analysis of discourse is based on 'contingent rationality' (Sharp and Richardson, 2001). Planning and policy are authoritative discourses, through which institutions and organisations pursue political objectives. As Richardson (1996: 279) argues, '*policy is shaped by arguments or discourses, based on knowledge claims which may be rational or irrational, reasonable or unreasonable*'. He criticises the 'turn to argument' in planning theory based on Habermasian approach which focuses on communication is power-blind, though scholars such as Healy has acknowledged power and weakness of communication actions. In real world, the deployment of power rather than the rationality shapes the policy and dominate policy debates. Therefore, Foucauldian approach is not so much linguistically based but more interested in the relationship between power, rationality and space (Richardson, 1996).

This research adopts a scaled discourse-analytical approach to study polycentric discourse in city planning in China, influenced by Foucault and like-minded scholars. First, plan making is based on the definition of urban development problems and how solutions are framed. This process is relatively selective and determined by power and rationality in the form of strategic decisions. Secondly, the task of planning is to coordinate conflicting interests within a process during which institutional structures, practices and actions need to be considered. Thirdly, in Chinese planning the master plan persists as an urban development blueprint that defines future development in a grand way. Language use in Chinese City Master Plans, especially about spatial patterns, tends to be simple and straightforward. Therefore, beyond the text, our analysis focuses more on the context and the power that is embedded in the planning content. Fourthly, when we consider the hierarchical and centralized nature of planning in Chinese cities, it becomes clear that power relations often

involve a range of stakeholders, such as central and local government, public agencies and the private sector. It is desirable, therefore, to add 'politics of scale' into discourse analysis (Keil and Debbané, 2005; Xu, 2016).

Foucault inspired discourse analysis has not always been consistently applied in empirical research because of its flexibility and abstraction and because there is no precise methodological principle for conducting it. However, Sharp and Richardson (2001) list some key questions that the Foucauldian discourse analytical method should concern, for example, discourse identification, manifestation, the struggles and conflicts between discourses. Jensen (1997) proposed a theoretical framework for analysing spatial planning for the urban space, which consists of the linguistic part, power-rationality part and the practice-oriented part of discourse analysis. This epistemological framework of discourse analysis is suitable for the consideration of space, politics, and economy.

Drawing on previous researchers' analytical frameworks (Jensen, 1997; Healey, 1999; Richardson and Jensen, 2000; Sharp and Richardson, 2001), this research analyses the polycentric discourses in Tianjin's planning roughly following five procedures: (1) Identifying the discourse object: The object of discourse in this research is specified as polycentricity but it is a complex entity that is constructed and transformed in the process of new discursive formation. (2) Context setting: The formation and transformation of discourse objects should be situated in social, economic, and historical context and explore what make new discursive practice possible, necessary or inevitable. (3) Discursive construction: This process does not simply refer to the use of the concept of polycentricity explicitly. It includes links to other plans and policies, the mode of problematisations, the use of specific vocabulary and concepts, the rhetorical mode, the components, and scales, and claims about knowledge. Texts were therefore categorised into these aspects in order to examine their underlying meaning, with the use of coding to provide reliability and comparability. (4) Mechanisms of power: The strategies and dynamics of power in the planning process are central to our analysis. The analysis focuses on inter-scalar political relations and investigates who is involved, what are their claims and purposes and how their contested and mutual interests and values are articulated and hence how previous discourse is reshaped. (5) Discourse institutionalisation: To analyse how discourse is translated into, or legitimized by, concrete policies and actions in the operationalisation, changes in institutional structures and tools for plan implementation will be highlighted. The

recognition that there is a reciprocal relationship between multi-scalar politics, institutionalisation practices and discursive practice is essential to the analysis process.

Key data include planning archives and master plan documents. Since the 1980s, Tianjin has had four master plans and the text analysis mainly is based on these, while the power relations and institutionalisation process are traced through planning archives and interviews. All these planning documents are written in Chinese and there is a risk that translation to English may lead to the loss of conceptual equivalence (Wolf and Fukari, 2007). To minimise the influence of translation, special attention was given to retain the original meaning as much as possible. For readers of Chinese, planning jargon is shown in its original.

### *Semi-structured Interviews*

The second qualitative method is semi-structured interview. The aim of semi-structured interviews is to learn about the historical context, underlying rationale and primary objects of spatial strategies, including the processes of polycentric development and the instruments and actions they adopt, what meanings they give to spaces. Qualitative interviews are helpful to gain a deeper understanding of the discourse and space reproduction, which cannot be obtained through documents and statistical data.

Semi-structured interviews have attracted more interests than other types of interviews because the viewpoints of interviewed subjects are more likely to be expressed in an open way (Flick, 2014: 207). The theoretical background of this method is that researchers study the topically relevant perspective in an interview. The reality is subjective rather than objective and absolute. This ontological stance affects the epistemological assumption and the treatment of relationship between researchers and the researched. Qualitative interviewing, as Seale (2011) claims, can be conducted from different epistemological standpoints, such as in a realist approach and in an idealist approach. In more detail, in a realist approach, interviews are viewed as resource, which provides real ‘fact’ independent of subject’s viewpoints. In contrast, the idealist position treats the interview as a topic, through which the interviewee’s account for the social world are expressed. In the latter approach, the interview is treated more as a social event and it is a process of data generation during the interaction of researcher and interviewees.



In practice, interview data are often analysed both as resource and topics, and this is the approach adopted here. On one hand, the interview materials were regarded as complementary to planning documents. As Sharp and Richardson (2001) argue, operationalising the Foucauldian discourse analysis requires a combination of research methods. The interview material can help to reconstruct the policy process through gathering information of context and identifying critical moments and events. On the other hand, interviewees' interpretations, attitudes and experiences towards polycentricity are also very important.

Interview were conducted with key stakeholders involved in the planning and spatial development process. Research participants were identified through two principles: (1) those who had substantial influences on the formulation of planning policy and the spatial layout of Tianjin; (2) those who have been involved in related initiatives for polycentric transition. Therefore, the targeted key actors were inevitably related to the political and planning system of China, which is thoroughly introduced in next chapter. Participants included government officials from both municipal and local level and from different department (e.g. the Development and Reform Commission, Planning Bureau, Land Bureau, Management Committee of policy enclaves, etc.), professionals and academics, and managers of enterprises (e.g. consulting companies, real estate companies, urban development corporations). In total, 43 interviews were conducted in two fieldtrips. The first fieldtrip was conducted between February 2018 and May 2018. In the first fieldtrip, interviews were mainly conducted with governmental officials from Tianjin Municipal Government and Tianjin Binhai New Area. Meanwhile, many secondary hand materials and data were collected. The second fieldtrip was carried out from May 2019 to June 2019, which mainly included interviews with governmental officials related to embedded cases and some supplementary interviews at municipal level. The detail list of interviewees is attached in Appendix 1.

These participants can be viewed as experts in the planning and development process in Tianjin, who have specific insights and knowledge. According to Bogner and Menz's (2009) definition, experts are those who have both specialist and practical knowledge referring to their specific professional sphere of activity. They further classify the knowledge and expertise into three types: namely technical, process and interpretive knowledge. Technical knowledge *'contains information about operations and events governed by rules,*

*application routines that are specific for a field, and bureaucratic competences and so on*' (Bogner and Menz, 2009: 52); Process knowledge is related to the information about the sequences of actions, interaction routines and past or current events the expert is involved or has knowledge; Interpretive knowledge refers to '*the expert's subjective orientations, rules, points of view and interpretations*' (ibid.). The expert interviews can provide the researcher both process knowledge and context knowledge. Generally, in expert interviews, the staff members of an institution with a specific function and knowledge are the targeted groups (Flick, 2014: 227). In addition, researchers that are interested in expert knowledge should treat the interviewees as a representative of a group rather than private person.

This perspective give rise to issues about identification of research participants and data analysis process. First, some of current government officials and planners may not be familiar with the historical facts and decision-making process. Therefore, this research also interviewed some retired experts who participated in planning making. Secondly, for successful expert interviews, the researcher was required to familiarise with the development history and planning content of case study city and to be equipped with related theoretical basis so that the interviewees' answers can be probed in more depth and details. In this way, the interviewees showed great interests and incentives in sharing and communicating information with interviewer. For example, one interview with local planners lasted more than three hours. Thirdly, the changing roles of interviewees between experts and private person were required to be clearly identified during analysis. More specifically, the answers based on the authoritative knowledge or personal experiences were clarified. This point is one of the key forms of failure for the expert interview (Meuser and Nagel, 2009).

Interviewees of this research were all at relative high positions and had competent experiences to answer my interview questions. However, it is difficult to gain access to authority group and public sectors' cadres in Chinese situation. Therefore, the help of colleagues from Nankai University played a key role in this process. Nankai University is the top university in Tianjin and has built a good relationship with Tianjin Municipal Government. In addition, participants were recruited from other channels. Two strategies were adopted here. First, researcher's personal network such as alumni was used to recruit qualified interviews. Second, based on the established local contacts in this process, a snowball sampling technique has been adopted to recruit more interviewees.

The interview topic guide was designed to restrict the questions and answer interactions to the research topic. The interview guide is essential because of interview time pressure and the need for narrow focus (Flick, 2014: 211). The interview guide was theoretical driven. Topics were inspired by the key themes that are emphasised in literature chapters and theoretical framework. Each interview typically lasted around one hour. A list of key questions has been developed and interview questions were tailored according to the types of interviewees (See Appendix 2). For government officials, the themes of questions are focused on the purposes and priority underlying spatial strategies, governance mechanisms, development process, the formation of centres and consolidation approaches, outcomes and challenges. Interviews with planners and academics focused on rationale and practice of polycentric principle in planning, selectivity of centres, development process and urban reality, driving forces and the role of plan, problems and challenges. From the enterprises' perspective, the main information collected were their relations with government, their interests and contribution, perception and expectations regarding polycentric development of Tianjin.

The classic qualitative approach through coding, sorting, sifting and integration data (Weiss, 1995; Chowdhury, 2015) was used to analyse interview data. All interviews were transcribed into Chinese first. When using direct quotations in writing up data, the important excerpts were translated into English. After transcribing, the transcriptions were coded manually by the themes of interview guide and research framework. At the initial stage, the main pre-determined themes were applied to interview transcripts. New themes emerged during the coding and categorising process and the coding system was refined, which was used to code the transcripts again. Then excerpts labelled under same themes were extracted into a same document to reduce and reorganise the data. Finally, the relationship and interactions between these themes were identified and interpretations were given based on the theoretical framework. Given the flexibility of qualitative data analysis, it also requires that researchers need to go beyond coding, sorting, and sifting and to actively perform in interpretive and reflexive way (Chowdhury, 2015). Therefore, the interpretation is necessarily a recursive, interpretive, and reflective process wherein initial findings need to be constantly revisited and refined.

#### 4.4.3 Research ethics

In this research, the main potential ethical issues are limited to confidentiality and consent. Before entering the field, an ethics application form was approved by the ethics committee at the University of Glasgow. All interviews were conducted following the requirement of ethics approval. Participant Information Sheet and Consent Form were provided before interview which ensure the participants know the research background and they were voluntary to get involved in the study. It is however worth noting that written consent was difficult to obtain, given the social and political norms and culture in China. Instead, oral consent was obtained.

Confidentiality is required to be well maintained in this research. Personal information and data were kept in a safe place and only the researcher can get access to them. Moreover, pseudonyms were used to keep interviewees anonymous. The cases of interviews were coded according to their types and characteristics. Interviews were referred in this thesis via pseudonym. G stands for government officials, P for planners, A for academics, F for firm managers. For governmental officials, the postfix refers to the tier of government: TJ for Tianjin, BH for Tianjin Binhai New Area, WQ for Wuqing District, DL for Dongli District, NK for Nankai District. However, this standard approach for anonymity and confidentiality maybe did not work well. The interview sample was not homogenous but rather consisted of a heterogenous group of individuals from different backgrounds. Especially for the government department, the attributes of organisation were kept in order to make sense of data. The interviewees (usually cadres of one specific department) may be able to be identified by other managers from another department. I discussed it with my interviewees about this issue and ensured they are comfortable with attributing the name of organisations, under which situation the confidentiality is not possible to guarantee.

#### 4.5 Conclusion

This chapter sets the research framework and methodology of this research. Based on theories of production of space and politics of space, a novel theoretical framework was developed, which argued a constructivist approach to investigating planning and practices of polycentric development in China. This theoretical framework includes several key themes identified from literature, which will be applied to empirical analysis shortly. This

framework will not only help a better understanding of the (re)production of polycentric discourses in the overall case, but also identify key themes for investigating practices in specific embedded cases.

In terms of methodology, an embedded case study was adopted and was combined with discourse analysis and semi-structured interview. Theoretical roots, data collection and analysis techniques were introduced as well. These two research methods will address research questions in a combined way, based on both interview data and secondary data. The empirical analysis will be presented in chapter 6, 7 and 8.

## Chapter 5 Contextualising polycentricity in China

### 5.1 Introduction

As discussed in literature review chapters, polycentricity is subject to different interpretations because of differences in the social-economic, political, and geographical context. Context is also an important element in the research framework in order to frame the polycentric planning and development. This chapter aims to set the background for the empirical analysis in the following chapters by considering the changing political framework, the planning system, and the restless urbanisation in the suburbs. These backgrounds are key to a better understanding of the demand for and rationality of polycentric development, considered both as an urban development trend and as a planning strategy.

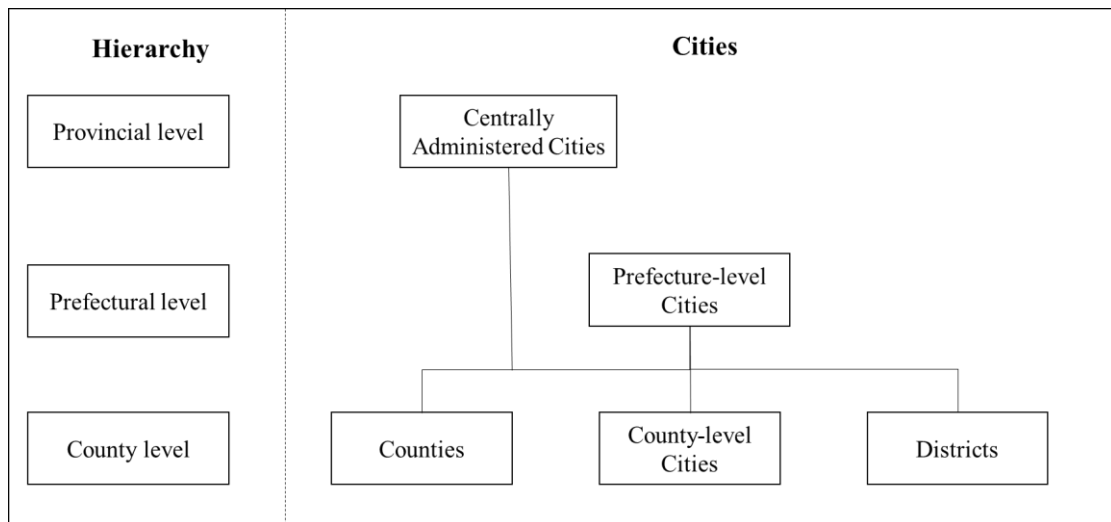
This chapter is organised as follows. First, it introduces the administrative framework and the dynamic relations between central and local government, which is relevant to the urban development policy and planning management. Following that, the evolution of planning system in China is introduced and special attention is attached to city master plans which provide an arena for the polycentric rhetoric. Then the political, economic, and socio-spatial changes in the suburban area are illustrated based on current (post)suburbia research in China. Finally, the chapter summarizes Chinese unique backgrounds and their implications for polycentric planning and practices in the case of Tianjin.

### 5.2 Political and institutional context

The features of institutional framework have great influence on the power relations and governance capacity for decision-making and policy implementation. China has a long history and its political framework and cultural characteristics are distinct from the western countries. Before the empirical research, the political and institutional background need to be careful investigated.

### 5.2.1 Hierarchical and fragmented administrative framework

The Chinese government is hierarchically organised and there are now five levels of government at the central, provincial, prefectural, county, township, and village levels. Due to the complexity of the administrative divisions in China, cities can be found at provincial, prefecture and county levels according to their political levels (Figure 5.1). Therefore, ‘city’ in China is an ambiguous word, which often refers to a large area including both urban and rural territories and has different political and economic power determined by its political level.



**Figure 5.1 Administrative framework of Chinese cities**

Source: Produced by author

The loose definition of city in China is the result of a series of administrative reforms, especially after 1978. The administrative restructuring has transferred more power to cities and enlarged their jurisdiction from the central cities into city regions (Ma, 2005). There have been three approaches of territorial restructuring since the 1980s (*ibid.*). The first is to implement a system of ‘cities administering counties’ (*shiguanxian*). Through this system, the prefectures were merged or adjusted to prefectural cities, and therefore the number of prefectures was reduced. The second strategy is ‘converting county to city’ (*xiangaishi or chexian jianshi*). The majority of counties were converted to county level cities and some of them are radically converted to prefectural cities in order to administer the surrounding counties. Since the early 1980s, the number of county level cities had increased rapidly. Most of these new county level cities are subordinated to prefecture level cities. The third key

approach is known as ‘abolishing county and establishing district’ (*chexian shequ*), which is achieved through annexation of suburban counties by a central city.

The administrative restructuring in China is a kind of rescaling strategy to devolve power from the central state to local level and to alleviate the conflict between political units at the same level. However, compared to Europe and the North America, China’s administrative system still has a rigid and observed hierarchical structure as the rank (*dengji*) determines the political and economic powers that the administrative units have (Ma, 2005). As well as the hierarchy, another feature of China’s institutional framework is fragmentation.

These two features are often combined and referred to a political system characterised by ‘fragmented authoritarianism’ (Lieberthal and Lampton, 1992) or ‘decentralised authoritarianism’ (Landry, 2008). This emphasises the fragmentation of power and authority within an authoritarian regime. The two seemingly paradoxical terms fragmentation and authoritarianism encompass the reality of China’s polity (Yang, 2013). ‘Authoritarianism’ in China’s political system refers to the superior authority of central state and upper level of government, barriers to participate in policy process and the concentration of decision power of leadership (Yang, 2013; Li and Liu, 2018). The fragmentation of authority is because the resources and authority are separated between various governmental sectors and bureaux at different levels. Therefore, the fragmentation is both along horizontal lines (*kuai*) and vertical lines (*tiao*) (Li and Liu, 2018). Horizontal line fragmentation means that power is divided into different sectors at the same level while vertical fragmentation indicates similar functions at different levels.

Spatial planning in China is a typical case of ‘fragmented authoritarianism’ (see Xu, 2016). This means that the responsibility of planning management is divided into different sectors such as development and reform commissions, land management bureaux and planning authorities. Fragmentation has led to complicated intergovernmental relations. The detail of power division will be introduced in the spatial planning system section later. The fragmented side of planning management indicates there are many actors involved in just single administrative level regarding spatial development in planning making and implementation. Moreover, authoritarian governance in China increases external forces from upper level of governments and from key politicians. Both cross-hierarchical and cross-sectoral intergovernmental bargaining and protracted negotiations are crucial in achieving



consensus in the policy process. These two sides or two lines of power relations are potentially dominant actors regarding polycentricity in the case study of Tianjin.

### 5.2.2 State entrepreneurialism

Along the vertical line, the relationship between the central state and local states has continuously changed due to the steady reform progress in China. Local states could include the provincial and municipal governments but also district governments, Subdistrict/street Offices (*jiedao*), Villages and Residents' Committees at lower political levels (Wu, 2002). Due to fiscal decentralisation and marketisation reform, local states are characterised by entrepreneurial endeavours at a variety political levels and have greater incentives on the land and housing development since the early 1990s (Duckett, 1998; Wu, 2002; Hsing, 2010). Many new terms such as the 'local state corporatism' (Oi, 1992), 'the entrepreneurial state' (Duckett, 1998) or 'state entrepreneurialism' (Wu, 2002; Wu and Phelps, 2011) have been coined to describe their proactive role in China's transitional context.

Prior to the reform and opening-up policy, the central state retained absolute control of local government through resource allocation under the planned economy. Since the reform policy, China's economy has shifted towards a more market-oriented economy and the organisation of state apparatus, capital, production materials and people has been reformed (Wu, 2002). Local governments have taken on responsibility for local development and expenditures from the central state. Since the early 1980s, the introduction of the 'fiscal contracting' system has provided strong incentives for local governments to pursue economic growth, especially the industrial development (Oi, 1992). Fiscal reform and new revenue-sharing arrangements have changed the disposition of local revenue between the central state and local states.

Local revenues include two categories: the 'within budget tax revenue' and 'extrabudgetary non-tax revenue'. Most of the latter can be retained by local government and thus fiscal reform has promoted local states' entrepreneurship. The Township and Village-owned Enterprises (TVEs) have become the major resources for revenue extraction. Oi (1992) terms this state-led growth as 'local state corporatism' and stresses its two features. First, due to the relaxation of central state control, local governments have shown characteristics of both a bureaucratic state and a business corporation. Local governments manage and coordinate

collective-owned enterprises in order to pursue economic development and to expand revenue sources. The growth benefits local economic development and alleviates budget constraints on becoming an effective government. Second, the role of local government at the lowest level such as the county, township, and village level has become more important.

Local state corporatism has fostered numerous TVEs in rural areas. They have made a great contribution to industrialisation and economic take off in the 1980s and the early 1990s. However, fiscal decentralisation has reduced the income of central government because local states are more likely to reduce the tax of enterprises to support TVEs' development in their own territory. Therefore, the central state launched the 'tax-sharing system' reform in 1994 to consolidate its fiscal capacity. This new fiscal regime led to a new type of urban entrepreneurial governance, which is heavily reliant on land and housing development.

This land finance regime emerged as a result of the new establishment of land and housing market in China. In the planned economy era (1949–1977), public ownership, state control over land distribution, free land use, and non-transferability of land-use rights were important characteristics of China's land policy before 1978 (Zhang, 1997; Haila, 2013). Since the reform policy (from 1978 to the present), a series of experiments on the system of land management has led to gradual shift from a centrally planned system to a dual-track system (Naughton, 1994; Lin and Ho, 2005). Pilot experiments of market mechanisms of land use were conducted in Shenzhen, Shanghai, Tianjin, Guangzhou, Xiamen and Fuzhou in 1987. The State Council then announced *A Tentative Regulation on China's Urban Land Use Rights Lease and Transfers* in 1990, which laid a foundation for the construction of a land market system, where the price mechanism and market competition are honoured in the process of land allocation, and land use rights can be transferred and traded in competitive markets (Zhang, 1997). These reforms thus ended the time when land use rights were free and land transfer was prohibited. After the announcement of *Land Management Law Articles of Implementation* in 1998, the legal system of land use and land management initially formed. Since 2004, land leasing is required to adopt the means of tender, auction and listing and any lease not involving a payment to a municipal government is illegal (Hsing, 2010).

China's urban land is owned by the state, while rural land is collectively owned by village committees. Only after land acquisition can rural land be transformed to state-owned land and be used for urban development. Therefore, the state (eventually commissioned by

the local government) is the sole legitimate land provider in China. The separation between ownership and use rights and allowing the trade of land use rights has had a tremendous impact on the growth of cities and urban development (Haila, 2013). Local governments can use land as a key instrument in regional competition for investment (Tao et al., 2010), macroeconomic regulation (Lichtenberg and Ding, 2009) and to increase the extra-budgetary revenue (Yeh et al., 2011).

Corresponding with the housing reform, the significance of land was further emphasized. Local states often adopt the strategy of low or even zero price for leasing industrial land in order to attract investment and create employment but higher price for residential land leasing to maximise the local states' interests. Residential development also leads to direct state engagement in business activities for profit-seeking (Duckett, 1998). Fiscal reform together with the economic decentralisation process, and land and housing market reform generated a pro-growth coalition between local states and developers, which has taken on some of the characteristics of a 'growth machine' (Wu, 2002).

Beyond the land revenue regime, Wu (2018) claims that 'GDP tournaments' is another explanation for the state's entrepreneurial behaviours. GDP growth is highly related to the occupational performance evaluation and promotion of local officials. This theory emphasises the role of local political leaders in promoting local GDP growth and argues that the role of centralised personnel control in actual politics is significant (Li and Zhou, 2005; Chien and Gordon, 2008).

In conclusion, state entrepreneurialism is exhibited at various tiers of government in China. The underlying reasons and mechanisms also varied in different development stages. Tianjin is a municipality under direct control of the central state. It has a higher political status and larger geographical scope. The internal relationship between different tiers of government are more complex and changed with wider policy changes. Considering polycentricity consists of many parts and elements, Tianjin need to be dissected from constituent units rather than treat it as a harmony system. The interests and behaviours of lower tier of government also demands special attention, which may result in significant spatial outcomes regarding polycentric development.

### 5.2.3 Rescaling of state power

Scale in geographical studies is no longer a fixed, pre-given concept. It could be understood at least in three dimensions: 'scale as size', 'scale as level' and 'scale of relationships' (Howitt, 1998; cited in Ma, 2005). Territorial rescaling has been widely applied as a strategy to restructure governance and power along geographical lines. Savitch (2010) summarizes three reasons for rescaling: (1) rescaling is a tool suited to the task; (2) rescaling sets rules for allocating power; (3) rescaling sets the scope for bureaucratic implementation.

Administrative rescaling was used to fuel economic growth in Chinese cities in the early phase, as mentioned in previous sections. A central city could increase its urban administrative area and gain control of more land resources and quotas from the surrounding counties (Ma, 2005; Wei, 2012). Such rescaling strategies adjusted the hierarchy of political entities in China and thus reshaped the political and economic powers of Chinese cities (Ma, 2005).

The devolution of central state, economic decentralisation, and local entrepreneurial government has led to serious economic, environmental, and social problems because of regulatory deficit. For example, in order to attract foreign investment, local governments take advantage of special institutional arrangement for land (e.g. local government compulsorily acquire rural land at low-cost, then lease it) (Lin and Yi, 2011). China has witnessed a large-scale conversion of cultivated land to urban land, illegal rural industrialization, development zone fever, and low efficiency of land use (Ho and Lin, 2004; Li and Yeh, 2004; Cao *et al.*, 2008; Deng *et al.*, 2010). Meanwhile, fierce intra-regional competition for key industrial projects can lead to a 'race to the bottom' at the expenses of long-term sustainability (Tao *et al.*, 2010).

The downscaling of governance to local states has also challenged the governance capacity of the central state. In order to cope with the crisis in governance, governance at city regional scale and regional scale began to re-emerge in policy frameworks from the 2000s onwards (Li and Wu, 2012; Wu, 2016). The emergence of city region governance is a new state rescaling strategy to recentralise the state power in post-reform China.

According to Savitch (2010: 13), the forms of rescaling can be categorised into four types, namely consolidated jurisdictions, multi-tiered jurisdiction, linked jurisdiction and jumped scales, evolving from a monocentric system to a more polycentric rescaling. The propensity to adopt any type of or a combination of rescaling tools depends on the historical and cultural context (*ibid.*). In China, the ways of city-region building include administrative annexation for ‘metropolitanisation’, proliferation of regional spatial plans and strategies, and soft regional institutional building for cooperation (Li and Wu, 2012; Wu 2016).

The recent rescaling process in China fits with the typologies of Savitch (2010), but the reasons and consequences of using these rescaling tools are influenced by China’s unique institutional framework. City region in China has become the ‘new state space’ to cope with the governance crisis of entrepreneurial city and pressures for sustainable development (Wu, 2016). It is not simply a focus concentration at upper level of geography but a process of political reconstruction and redistribution. Rescaling strategy has led to a more polycentric governance mode in terms of local development. It has created a new tier of political forces and imposed external incentives and constraints on local development.

These rescaling tools have also been widely applied in Tianjin. Tianjin has finished the consolidation process within its jurisdiction and has been involved a new region building strategy stressed by the central state recently. Their influences on the discursive changes and development strategies adjustments regarding spatial development need to be considered during empirical analysis.

## 5.3 The changing planning system

After setting the administrative framework, this section elaborates the evolution of spatial planning system in China. As mentioned above, China’s planning management is very fragmented and various plans are related to spatial development. Through a thorough analysis, the most important type of plan for this research can be identified.

### 5.3.1 Spatial planning system in China

Spatial planning is a comprehensive function and provides a long-term spatial vision in terms of economic, social, ecological, and environmental development at local, regional, national,

and international scales. For China, the spatial planning system is relatively complex and fragmented. Since the foundation of People's Republic of China, the central government has always sought to improve the spatial planning system. Recent reform in both the planning system and planning governance is manifested by the establishment of a new Ministry of Natural Resources in 2018 and a trend towards a more integrated spatial planning system.

Until the current reforms are implemented, there are many parallel types of plans related to spatial deployment in China. Content related to the spatial distribution of resources (industries, peoples, land) and spatial arrangement can be easily found in many formal and informal plans in China. Generally speaking, the spatial planning system includes social and economic development plans (plus major function-oriented zone plans), urban and rural plans, land use plans, environment plans, and infrastructure plans (Wang and Liu, 2012). Among them, social and economic development plans, urban plans and land use planning constitute the main body of the Chinese planning system while the other plans also include spatial elements but do not play such a decisive role. Some of these plans are conventional plans or the legacy of the planned economy while others are relatively new or still tentative, designated for special purpose in transitional context (Wang and Liu, 2012).

Each type of plan is relatively independent and managed by a variety of departments at different administrative levels (Table 5.1). Planning in China is usually stratified at the national, provincial, and municipal level according to the administrative hierarchy. Before 2018, the social and economic development plans, urban plans and land use plans were under the management of National Development and Reform Commission (NDRC), the Ministry of Housing and Urban-Rural Development (MOHURD) and the Ministry of Land and Resources (MLR) and their local arms respectively (Wu, 2015; Xu, 2016). The governance of different types of plan also require interdepartmental coordination and cooperation between different tiers of government and government bodies. The existence of these multiple tiers and multiple departments often generates conflicts during the plan making and implementation processes. Therefore, government officials from these departments are also the key interviewees.

**Table 5.1 Three series of plans in China's spatial planning system before the establishment of Ministry of Natural Resources**

Series	Type	Scale	Responsible authorities	Legal Basis	Status
Social and Economic Development	Social and Economic Development Plan (Five-year plan)	National, provincial, municipal, county and township level	National Development and Reform Commission and its local authorities	Constitution of PRC	Legacy of planned economy
	Regional Strategic Plan	National and provincial level		Non-statutory Plan	A new type of plan for specific regions after 2000
	Major Function-Oriented Zones Plan	National and provincial level		Non-statutory Plan	A new type of plan for spatial governance after 2010
Urban and Rural Development	Urban System Plan	National, provincial, municipal, county and township level	Ministry of Housing and Urban and Rural Development and its local authorities	Urban and Rural Planning Act	Conventional urban planning
	Master Plan	Municipal, county and township level			
	Detailed Development Control Plan	Municipal, county, and township level			
	Detailed Construction Plan	Municipal, county, and township level			
	Strategic Plan	Municipal and county level		Non-statutory Plan	A new type of plan after 2000
Land Use	Territory Plan	National and provincial level	Ministry of Land and Resources and its local authorities	Non-statutory Plan	In the exploratory stage
	Land Use Master Plan	National, provincial, municipal, county, and township level		Land Management Act	Introduced in the late 1980s; merged with City Master Plan in some cities

Source: Translated and adapted from Wang and Liu (2012)

## *The Social and Economic Development Plan*

The Social and Economic Development Plan is also well known as the Five-Year Plan (FYP) in China and it has the highest level of standing among all types (Fan *et al.*, 2012). The Five-Year Plan evolved from the socialist economic plan in the pre-reform period, but it is still an important plan for governing economic and social development, even in post-reform China (Wang and Shen, 2014).

The FYP is compiled by the Development and Reform Commission. The Constitution of the PRC requires governments at national, provincial, and municipal or county level to compile and implement FYP. It is continuous except for the Adjustment Period (1963-1965) after the Great Leap Forward. As China selected a gradual and pragmatic reform approach, the social and economic plan transformed along with the transition of political economic context over the years. The first FYP (1953-1958) was made in 1953. Between 1953 and 1980 (first to fifth FYP), the FYP had a decisive influence on spatial development through ministry-led projects (Wang and Shen, 2014). In this period, the spatial element of the FYP was only a subordinate mechanism in planned economy (Wu *et al.*, 2006). The central government rigidly controlled enterprises, residents and authorities in local areas under a planned economy through central budgetary process (Ng and Tang, 1999). The FYP determined resource allocation and economic production in the form of vertical control.

After the market-oriented reform from 1978, the construction of the ‘socialist market economy’ weakened the role of the central state. To promote economic growth, National Social and Economic Development Plan set out specific policy areas such as specific economic zones, open cities in the eastern coastal region, which led to the subsequent enlargement of regional disparities. A project-led approach, especially for large infrastructure projects, was still employed to support national and regional development (Wang and Shen, 2014).

Meanwhile, due to administrative decentralisation, local governments became more motivated in promoting territorial-based development, which led to the many problems in spatial development. As a response, NDRC created a new type of plan that is Major Function-Oriented Zone Planning in order to enhance spatial governance and integrate different types of plans.



Major Function-Oriented Zone (MFOZ) planning is a new attempt to achieve China's spatial planning that has emerged since the Eleventh Five Year Plan (2005-2010). In 2010, the State Council approved *National Major Function-Oriented Zone Planning* (The State Council, 2010). The MFOZ plan aims to promote the efficiency of the territorial system, optimise the general spatial pattern, coordinate regional development and more importantly provide a practical platform for the integration different kinds of planning through the enforced spatial regulation based on territorial function (Fan *et al.*, 2012). The territorial space is divided into four types of major function-oriented zones, i.e. development-optimized areas, development-prioritized areas, development-restricted areas and development prohibited areas according to carrying capacity, development intensity and development potential (Fan and Li, 2009; Fan *et al.*, 2010). At present, MFOZ plan has been made at the national level and provincial level. The national level MFOZ plan merely guides and directs development while the provincial level MFOZ plans clarify the development orientation in more detailed geographic units (Fan and Li, 2009; Fan *et al.*, 2012).

### *Urban and rural planning*

Urban and rural planning is another important planning series regarding spatial development. Urban planning was first introduced as a physical plan to complement FYP in urban areas in the 1950s. As mentioned above, under the planned economy, the FYP determines investment and distribution of resources. Therefore, urban planning was subordinated to the FYP and mainly employed as a tool to facilitate the site selection and spatial distribution of economic activities (Ng and Tang, 1999). In addition, owing to the unstable political environment, urban planning was criticised by the state and ultra-Leftists as a revisionist activity and was suspended during Cultural Revolution period (Qian, 2015).

However, after the economic reforms of 1978, urban planning returned to regular and normal practice. The shift towards growth-oriented development and economic decentralisation redefined the central and local relations (Wang and Shen, 2017). Instead of being regarded as a means to engineer systems for central investment and ministry-led projects, cities took in charge of the organisation of economic and cultural activities and infrastructure construction (Ng and Tang, 1999). In this process, emerging planning problems necessitated the improvement of the legal foundation of urban planning (Yeh *et al.*, 2011). The 1984 Urban Planning Regulation provided guidelines for urban planning and then the 1990 Urban

Planning Act developed a comprehensive approach to urban planning, including economic strategy and policy formation. Urban Planning therefore became more important and FYP was marginalised, as FYP at municipal level often reiterates the content of FYP at upper level (Wang and Shen, 2017).

In 2008, the old Urban Planning Act was replaced by the new Urban and Rural Planning Act, which transformed the urban-biased planning framework and extend the urban master planning from the central city to cover the entire city administrative area (city-region) including rural areas (Qian and Wong, 2012). To avoid negative effects and to regulate the increasing power of municipal governments, it became necessary to plan a city within a broader regional context. Therefore, the regional plan and urban system plan were revived. The Regional Strategic Plan was often initiated by NDRC, while the Urban System Plan was under the supervision of planning authorities. The Urban System Planning (*chengzheng tixi guihua*) is essentially a kind of regional plan to rationalise the ‘function, hierarchy and spatial’ structure of infrastructure and urban settlement (Yeh *et al.*, 2011). The National and Provincial Urban System Plan is often a separate statutory plan while the urban system plan for cities and surrounding rural areas is often embedded into master plans as required by the old Urban Planning Act. The Urban and Rural Planning Act 2008 also attaches a city-regional level plan to city master plan, which is intended to integrate the central city and nearby towns and counties into a coordinated city region (Yeh *et al.*, 2011).

Master plans usually have a 15 to 20-year planning horizon and offer a general perspective. The implementation of master plans is effected by detailed plans that provide regulations for construction projects. There are two types of detailed plans, Detailed Development Control Plans and Detailed Construction Plans. In addition, a new type of plan has emerged out of statutory planning system since 2000, called the Strategic Plan or Concept Plan. This new type of plan is much more flexible and can avoid the constraints of traditional statutory planning, such as confining to administrative boundaries, and a long approval process (Wu and Zhang, 2007). The aim of this plan is to organise urban space to promote urban competitiveness and place promotion rather than development control (*ibid.*).

### *Land use planning*

Compared to the two series of plans discussed above, Land use planning is relatively new in China. It is introduced as a sectoral plan in the late 1980s, responding to the changes in the land use system. Land use planning was conceived by central government and the main aim is to protect and conserve farmland and to control urban development (Xu and Ng, 1998). After the implementation of the 2008 Urban and Rural Planning Act, the subjects of City Master Plan and Land Use Master Plan are overlapped, resulting in conflicts in terms of spatial development (Wang and Shen, 2017).

Land Use Master Plan usually has a similar planning horizon to City Master Plan. Land Use Master Plan obtains control power through the top-down land quota control system, which determines the area of new construction land and arable land. Land use planning is administered by Ministry of Land and Resources (MLR), established in 1998. Like City Master Plan, Land Use Master Plan also focuses on the control of development at city level, but the emphasis is more on the conservation and protection of farmland and natural resources. There is another regional plan at national and provincial level, called the Territory Plan. Territory Plan includes all activities linked to the use and development of land as well as conservation (Wang and Hague, 1993). Although the pilot work has been conducted since the 1990s, it is still in the exploratory stage (Wang and Hague, 1993; Wang and Liu, 2012).

#### **5.3.2 The City Master Plan: an arena for polycentric rhetoric**

Amongst all these plans, the City Master Plan (also known as the Comprehensive Plan or the Overall Plan) was regarded as the most important plan by planners (Yu, 2014). This is because the content of City Master Plan includes a description of the nature and size of the city, development strategy and objectives, land use and zoning, infrastructure development (*ibid.*). Moreover, the spatial elements of other plans such as Major Function-Oriented Zone plan are gradually being incorporated into master plans in the integrated trend of different types of plans. City Master Plan is required to be approved by upper tier of government and for municipalities and provincial capitals, their City Master Plans are required to be approved by State Council.

Significant political and economic shifts have been affecting urban planning theory and practice in China. The Urban Planning Act of 1990 and the latest Urban and Rural Planning Act of 2008 provide legal bases for the master plan making, implementation, revision, and monitoring. The evolution of the master plan can be classified into four phases, which shows the continuities and changes in planning rationality, topic, functionality, and approaches (Table 5.2). It is worth mentioning that there is no single clear watershed, as innovative planning practices are often adopted by cities in eastern China and other developed regions before spreading more widely.

In the past four decades, the changes can be summarized as follows: (1) the planning approach has shifted from a traditional ‘build and design’ to a policy-oriented approach; (2) planning management has shifted from a traditional hierarchical regime to governance involving an increasing number of actors; (3) the rationality and functionality of the master plan is evolving from planning for control, to planning for growth, and most recently to planning for sustainable development; (4) the contents of master plan are more enriched and require cross-disciplinary knowledge and more skills among planning profession; (5) the planning area is enlarging to the whole administrative area to facilitate the integration of development and to strengthen control over planning.

Due to these features, City Master Plans are identified as key planning documents to investigate the polycentric discourses and practices. Master Plans herald the representation space of the planned territories and places. They also have capacity to manifest the multi-layered and multi-sectoral urban governance of China that has emerged in recent decades. This does not mean that other plans are unimportant. Tianjin, as one of four municipalities of China, is a provincial level city and almost all types of plans in the spatial planning system have been made for Tianjin. Nonetheless, the spatial elements of other plans can be readily identified in its City Master Plans, which further shows that the master plan is an appropriate policy arena for research on polycentricity.

**Table 5.2 The changes in Chinese Master Plan**

Period	Master planning Phases	Planning Rationale	Function of planning	Approach and practice of plan-making	Contents	Development Control	Urban planning knowledge	Planning area	Challenges and problems
Pre-reform	Before 1978	Physical and technical plan	To guide urban production and living; To materialise economic planning through site selection and physical design	Socialist planning system; Blue-print approach outside political process; Confidential and internal government document	Overall spatial layout; Transportation, power and telecommunication networks, water supply and drainage; Parks and open space	Directives and controls of central economic planning	Architecture and civil engineering in terms of aesthetics	City proper	Subordinated to central economic planning; Without power to regulate the development within self-contained work unit and communities; Lack of legal basis
Post-reform	1979-1989	Comprehensive plan; Extended technical interpretation	To guide development of the city/town system and infrastructure; To prepare new space for the reform and opening-up policy; To minimise development cost under uncertain conditions	Rational planning approach; Consideration of local context; Confidential internal government document	Increasing content of socio-economic development; Urban system plan; District plan; land zoning; Infrastructure plan; Environmental protection; Redevelopment plan of old central city	Urban Planning Regulation provided guidelines	Dynamics of cities and regions from the subjects of economy, geography and social science; Urban planning administration and implementation	Urban system plan (regarding towns, counties and villages as points); Urban area plan	Lack of public participation; Little attention to environmental and social dimensions; Lack of flexibility and time-consuming process for authorisation procedure; Outdated plans often lagging actual development; Weak control because of local discretion and manipulation
	1990-2007	Comprehensive plan; An instrument for growth promotion	To facilitate and justify urban development; To enhance economic competitiveness and promote investment	More strategic and policy-oriented; Political rationality	Social and economic development; Land zoning; Infrastructure plan; Redevelopment plan; Historical and cultural heritage conservation; Environmental protection	‘One report and two Permits’ (Site Selection Recommendation Report, Land Use Planning Permit and Building Construction Permit)			
	Since 2008	Comprehensive plan; Strategies and tactics to control economy and society	To enhance the spatial governance of central and local state; To pursue more sustainable development	Spatial planning approach; Political rationality; Integrating and incorporating elements of other planning	Economic globalisation and urban and regional development; The designation of Low carbon and eco-city; Coordinated urban-rural development	‘One report and three permits’ (Site Selection Recommendation Report, Land Use Planning Permit and Building Construction Permit, Rural Construction and Planning Permit)		The whole jurisdiction area	Requirement of corresponding institutional reform; Heavy workload for the rural area plan planning making; Changing role of planning profession

Source: Summarized by author based on literature (Xie and Costa, 1993; Ng and Tang, 2004; Qian and Wong, 2012; Gu et al., 2014; Yu, 2014; Wu, 2015; Zhao, 2015; Wang and Shen, 2017)

## 5.4 Dynamics of peripheral space

In the socialist period, China's cities adopted a compact development strategy. Due to the market transition, Chinese cities have experienced rapid expansion and new development in the peri-urban areas since the 1990s. There are several major elements contributing to the spatial restructuring of Chinese cities: urban land use changes, the infusion of foreign and domestic capital, urban deindustrialisation and tertiarization, improvements in transportation, and new housing development (Zhou and Ma, 2000). Under the market-oriented economy, the demands for high-quality and luxury housing is an important factor for the outflow of population from city-centre (Feng *et al.*, 2008; Shen and Wu, 2012). Moreover, the suburbs, especially the inner suburbs, are also important receiving areas for rural-urban migrants (Wang and Murie, 2000; Zhou and Ma, 2000; Wu, 2010). All these factors have led to the growth of suburban areas.

Although the suburbanisation in China is increasingly driven by market factors, urban sprawl and suburbanisation are not driven by the private sector but are mainly the result of state entrepreneurialism, which directly or indirectly is involved in the institutional and spatial restructuring process (Zhou and Ma, 2000; Wu and Phelps, 2008; 2011; Shen and Wu, 2017). The intervention of the state has complicated suburban development in China. The development and redevelopment of city centres, mass suburbanisation and post-suburbanisation happened simultaneously in China's cities, unlike the sequential processes of western cities (Wu and Phelps, 2011). Wu and Phelps (2008) summarize several features of post-suburbia which may fit with a number of different national contexts. Among them are mixed land uses, loose geographic form, the balance of residence and work, and the entrepreneurial role of state.

The suburbanisation of Chinese cities has evolved into a new stage. Recent suburban growth in China can be regarded as post-suburbia according to Wu and Phelps' (2008) definition. Physically, a mixed and high-density development mode has been adopted in the majority of suburban settlements, so that new private housing development, affordable housing, shopping malls and retail parks, the variegated development zones spring up together in the suburb (Feng *et al.*, 2008; Gu *et al.*, 2015). Economically, the development of suburban enclaves is associated with the wider city-region economic development and restructuring

(Wu and Phelps, 2008). Socially, the appearance of new social groups or the fragmentation of previous classes, has restructured urban space in both central and peripheral areas (Gu *et al.*, 2015). Politically, the administrative status and boundaries of these newly produced enclaves are contested and the contradictions between different governance bodies have begun to emerge (Wu and Phelps, 2011). In addition, the metropolitanisation process has transformed the relationship between the central city and its suburbs, and even straddled municipal boundaries (Wu, 2016). The coexistence of different types of suburb and a the new politics of suburbia require the scrutiny of the space and governance for suburban settlements and enclaves.

## 5.5 Conclusion

This chapter provides a broad but essential context for investigating polycentricity in Tianjin in the empirical chapters that follow. The background involves features of political framework, the evolution of spatial planning system and the emergence of a more dynamic urban space in the peripheral area in recent decades, which together make the polycentric development in China unique.

This context corresponds to the three core elements of the research framework and helps to shape the analytical angles for empirical research on Tianjin's polycentric transition. First, the market-oriented economy in China has not weakened the role of the state in the production of polycentric cities or city regions in China. Instead, the combination of market forces and the decentralised state apparatus has reshuffled the power relationship between central and local states. State spatiality in China also shows periodisation from downscaling to the local developmental state though to subsequent upscaling towards the city-region again (Wu, 2016). Therefore, the political system in China is no longer simply a hierarchical system, it is more accurately a form of 'fragmented authoritarianism'. It is a political system involving multi-tier governments and multiple sectors and affiliated agencies. The rank and boundary of administrative units are two important elements that determine the power capacity and jurisdictions. Therefore, in the analysis, governments at multiple levels and their relationships must be involved as well.

Second, it is notable that the legal and administrative elements of the spatial planning system in China are very fragmented. There are many different plans that need to be coordinated

and integrated. Among these, the City Master Plan has been identified as the most important plan at the city level as it provides the key arena for polycentric rhetoric. In recent decades, planning ideology has shown significant turns corresponding to the political reform and development stages. The City Master Plan has evolved from simply a technical plan in the planned economy to an instrument for growth. Very recently, the City Master Plan adopted a spatial planning approach in order to enhance the spatial governance and to pursue sustainable development. The changes in planning ideology as well as interdepartmental coordination and conflicts must therefore be considered when analysing the concrete content of master plans.

Third, market-oriented development and state entrepreneurialism have both led to the creation of new spaces and produced dynamic landscapes in the suburbs. In the context of globalization and rapid urbanization, Chinese cities have experienced rapid urban growth and their suburban areas have become extremely dynamic and complex. New development in their peripheral areas have started to show some characteristics of post-suburbia, and this process contributes to the formation of polycentric city regions. The suburbanisation in China has evolved into a new stage and embryonic edge cities have emerged (Feng *et al.*, 2008; Wu and Phelps, 2011). Therefore, new places created in planning visions or formed spontaneously in the peripheral area of Tianjin require more attention when discussing polycentricity. Furthermore, the concrete changes and influences in space and governance need to be unpacked, considering the diversity of policy enclaves and the strong role of state.

After setting up the context, the next chapter will set the specific context of Tianjin first and then investigate the underlying meanings and rationality of polycentric discourses by discourse analysis of master plans. After that, places beyond the traditional central area in the polycentric system are selected for further exploration in chapter 7 and 8.



## **Chapter 6 The (re)making of polycentricity in Tianjin's spatial planning discourse since 1978**

### **6.1 Introduction**

After outlining the general political, planning and urbanisation context for polycentricity in China in last chapter, this chapter aims to answer the first main research question of this research, that is how and why polycentric development has been applied in China's policy and planning realm by using Tianjin as a case study. The concept of polycentricity has been widely adopted in China's urban planning system, especially for large cities such as Tianjin. There is, however, little research that investigates polycentricity in China's urban planning theories and practices in its transitional context. Therefore, this chapter investigates the formation of distinctive discourses of polycentricity in several editions of city master plan in Tianjin and the mutual relationship between power, knowledge and space in the discourse (re)formation process by applying the analytical framework proposed in chapter four. Through a discourse analysis of key planning documents, the discursive changes in nuance and their underlying meanings are identified based on the definition framework of polycentricity established in chapter two. Power relations, institutionalization processes, role of professionals and the establishment of polycentric system are traced through planning archives and interviews with planners and government officials.

This chapter first provides the specific context of Tianjin for its plan making in different phases. More explicitly, the brief history, recent administrative adjustments and the socio-economic dynamic are analysed. An overview of different versions master plans and key planning spatial concepts are listed and clarified in the following section. Then, the discourses of polycentricity in each master plan are interrogated in detail by using the Foucault-inspired discourse analysis. The relationship between inter-scalar power relations, professional knowledges and the discourse formation and legitimation process are stressed in this process and further summarized in the following section. After that, a polycentric system comprising different levels and types of centres is proposed based on planning documents and interview materials, which provide insights for the embedded cases selection. Finally, a conclusion about the evolution of polycentric discourses and underlying rationale in Tianjin are summarized.

## 6.2 Specific context of Tianjin

As shown in the analytical framework, the historical development process, socio-economic conditions, and political context are critical to frame the discourse of polycentricity. After contextualising polycentricity in China, the place-based specific context also needs to be added.

### 6.2.1 A brief history of Tianjin and the origins of polycentricity

Although Tianjin is a young city (the walled city was founded on December 23, 1404), it has become famous city in Chinese modern history worldwide due to its strategical geographical location. As the gateway to Beijing, Tianjin's development history was highly influenced by Beijing and the development of a port across its whole development history. The city of Tianjin was formed at the so-called 'Sanhuihaikou' where the Grand Canal and the Hai River meet. Because of the opening of Grand Canal in Sui (AD 581-618) and Tang dynasty (AD 618-907), Tianjin became an important transshipment centre. Moreover, during the Ming Dynasty (AD 1368-1644), Tianjin became a walled city and military base called 'Wei' to protect the capital city Beijing (Duckett, 1998).

From 1860, following the Second Opium War, Tianjin was opened as a treaty port to foreign trade because of its proximity to the political centre of Beijing and the amenities of the port. Tianjin was forced into the process of industrialization and became a diplomatic, commercial, and industrial centre during the concession period. The construction of concessions reconfigured the spatial development of this traditional city and a new commercial centre was formed near Zizhulin port in the concessions (Interview, A02; G16TJ). This place has become the current city centre. During the concession period, Tianjin was a base for the westernisation movement and one of the earliest cities in China to establish the modern industrial system. In addition, trade related business developed rapidly and banks, shops, and hotels sprang up (Duckett, 1998).

Because Zizhulin port was a river port with limited carrying capacity, a new port was gradually built in Tanggu, near Hai River Estuary. The relationship between old Tianjin and Tanggu has become increasingly tight since the early of twentieth century. In 1930, famous urban planners Sicheng Liang and Rui Zhang compiled the first master plan of Tianjin which

had already begun to consider Tianjin's function and development strategies from a larger regional perspective and suggested the administrative annexation of Tianjin and Tanggu in future (Interview, P01). The application of polycentricity in Tianjin can therefore be traced back to this initial master plan, which stressed the interaction between Tianjin and Tanggu, two separated urban settlements (Interview, P01). When occupied by the Japanese (1937-1945) in the Second World War, two urban plans were launched, namely *Outline of Tianjin City Plan* and *Greater Tianjin Plan*, which attached special attention to Tanggu and proposed to build a new harbour in Tanggu. Although these plans were not implemented, they generated significant impacts on the planning and spatial development of Tianjin after the foundation of People's Republic of China (PRC).

### 6.2.2 Administrative adjustments since the foundation of PRC

The jurisdictional boundary and the political system of Tianjin have been changed many times between 1949 and 1979. The history of administrative adjustments is helpful to learn the development trajectories of Tianjin's urban system. Here only important adjustments are mentioned.

As introduced above, in modern history the city of Tianjin was quite compact and small, referring only to the central area at the 'Sanchahekou'. Before the foundation of PRC, Tianjin was surrounded by other counties and their administration was independent. Tanggu was governed by two different counties which were separated by Hai River.

After the foundation of PRC, Tianjin was appointed as a municipality directly governed by the central government. Tanggu was set up as one of the districts of Tianjin in the form of exclave with a distance of 50 km. In 1952, a county level city, Hangu, was annexed to Tianjin as a new district. After an unstable period between the 1950s and 1970s when Tianjin lost and then regained territory with a maximum jurisdictional area over 40,000 km<sup>2</sup> (Interview, P01), the jurisdiction of Tianjin finally became stable since 1979. From then on, the administrative system consisting of inner six urban districts, four suburb districts, three districts in coastal area and five counties was built up, which covers an area over 11, 000 km<sup>2</sup>.

Therefore, Tianjin has a significant larger spatial scope than most cities in the West. The city administration has extended to the rural and peripheral area. The traditional central city and their hinterland are included within the same jurisdiction. It is a city region essentially, and the local authorities were governed by the Tianjin Municipal Government directly.

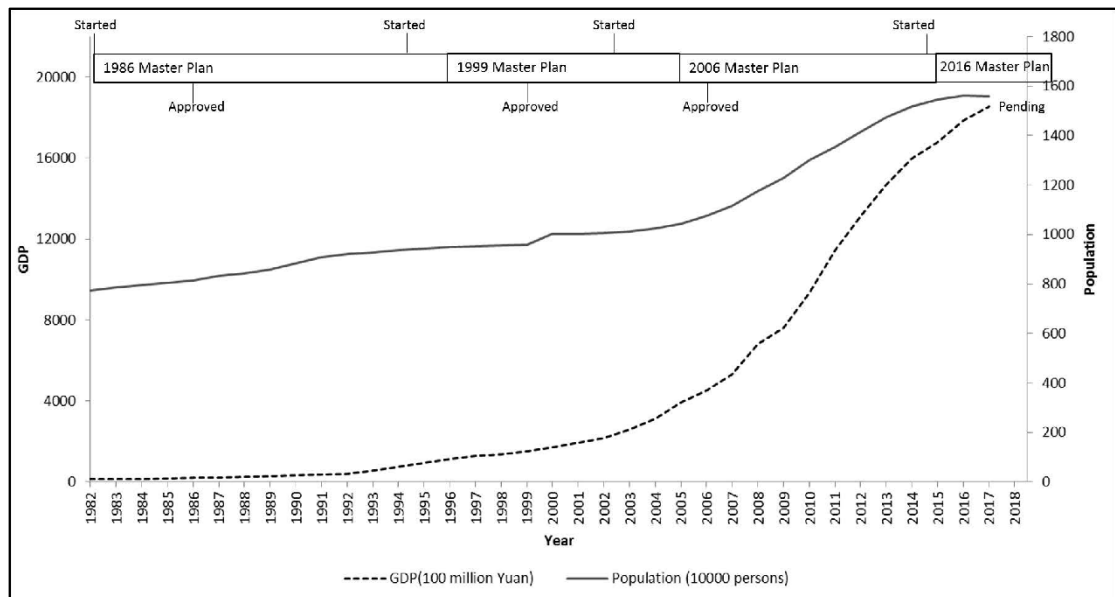
Since the economic reform policy, there have been only administrative adjustments within Tianjin's jurisdictional area. From 2000 onwards, the counties in Tianjin were transformed gradually into urban districts. The counties of Wuqing, Baodi, Jinghai, Ninghe and Ji were converted to urban districts in the year 2000, 2001, 2015 and 2016 respectively. Three coastal districts (Tanggu, Hangu and Dagang) were merged into Binhai New Area in 2009. Therefore, now Tianjin is divided into 16 county-level divisions, which are all districts. These districts make up the second tier of the local government system, while the Tianjin Municipal Government represents the first tier of government. In conclusion, the course of several rounds of administrative adjustments has led to a rudimentary, historically created polycentricity in Tianjin.

### 6.2.3 Socio-economic conditions for plan-making

The overall socio-economic dynamics need to be considered when making new plans and policies. Facing different political and socio-economic conditions, the objectives, governance and the implementation of polycentric policy differs in different city and regions. For example, for a growing metropolitan area, the normative agenda is more likely to create polycentricity to sustain growth, while a relatively polycentric city or region will maintain the polycentricity to improve competitiveness (Schmitt, 2013).

Tianjin's economy fluctuated and was heavily influenced by changing national policies and circumstances in the pre-reformed period. Policies such as Third Front Construction and unstable administrative adjustments reduced the financial and material support from central government and restricted its development (Wei and Jia, 2003). In 1976, a severe earthquake led to the loss of many lives and destroyed the city's infrastructure, which further eroded Tianjin's status in the national economy. The master plan was been frequently revised and not well implemented in this period (Interview, G03TJ).

Since the 1980s, like many other Chinese coastal cities, Tianjin has been experiencing dramatic and rapid urbanization, economic growth and spatial reconstruction. To guide development, four rounds of master plans have been produced since the 1980s, which also mark the different stages of urban change (Figure 6.1). The first important master plan started to be prepared in the early 1980s. Suffering from erosion of status because of the development bias towards Beijing (Wei and Jia, 2003) and the impacts of natural hazards, Tianjin had a large population but the economic base was weak. With the success of experimental reform policy, Tianjin's economic development began to revive when making the second-round master plan. By the time of the third-round master plan, Tianjin was showing a great growth rate in both population and GDP. Recently, the economic and population growth rate has become much lower than the earlier rapid growth period.

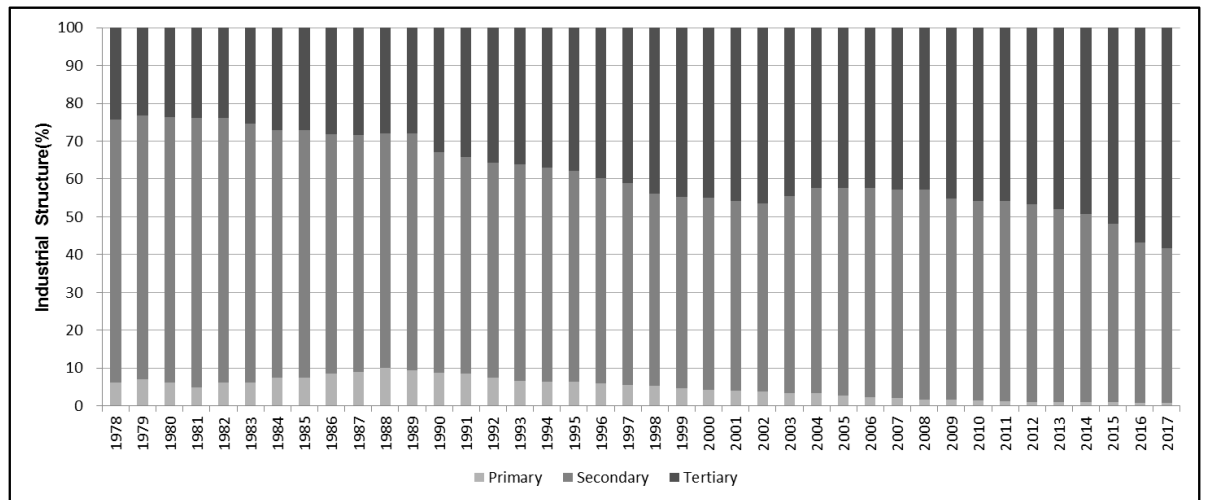


**Figure 6.1 Planning cycles and socio-economic conditions in Tianjin**

Source: TJSB, Tianjin Statistical Yearbooks, various years

The economic restructuring indicates that Tianjin is evolving from an industrial city to a post-industrial city. Tianjin was a traditional industrial city. Based on its industrial foundation and resources, a comprehensive industrial system comprising heavy and light industry was built up. After the reform policy, Tianjin took initiatives to adjust its industrial structure towards the service economy. In the 1980s, Tianjin's secondary sector made up over 60 percent of GDP, while this figure dropped below 50 percent GDP in 2014. On the other hand, the tertiary sector composition increased from 24.3% to 58.2% of GDP (Figure

6.2). As a result, Tianjin saw a robust development of service industries, especially productive service industries. Among these industries, leasing and business service, scientific and technical services and financial intermediation saw the most significant increase. The spatial organisation and geographic distributions of economic activities also showed distinct characteristics in different development stages because of the changes in dominant industries.



**Figure 6.2 The evolution of industrial structure, 1978-2017**

Source: TJSB, Tianjin Statistical Yearbooks, various years

## 6.3 Overview of the master plans

### 6.3.1 Master plan before 1978

During the first three decades post-1949, China's urban development was influenced by Chairman Mao Zedong's ideology. The Marxist ideology that regards the city as an evil place was enacted into policies and urban planning (Wu, 1993). Under the centrally planned economy before 1978, urban planning was perceived as a tool for translating the goal of economic planning into urban space (Yeh *et al.*, 2011). The master plan in the First Five-year Plan therefore valued the purpose of industrialisation while urban functions were ignored (Qian, 2015).

Tianjin was confirmed as the secondary type industrial city in its first master plan in 1954, according to the national classification. The plan claimed that the redevelopment of the old

downtown should be a priority for urban development. The spatial proposal was a typical monocentric model with concentric ring roads. In this plan, China emulated Soviet planning and design. The city centre had a significant monumental, symbolic and political meaning, covering an area of 13-ha and a new public square was planned.

Land use specialisation and construction of satellite towns were advocated in planning practice in the pre-reform period. Tianjin learned from the Moscow's city plan and the concept of satellite towns was introduced to Tianjin (Interview, G03TJ). In 1958, Tianjin revised its former master plan and proposed to build four satellite towns (namely Yangliuqing, Xianshuigu, Junliangcheng, Dananhe), located in the near suburbs. The spatial vision of Tianjin has begun to evolve from one single city to a hierarchical urban system.

However, because of radical movements and unstable political and economic environment in the Third and Fourth Five-year periods, urban planning was suspended until the early 1970s but then gradually recovered to a routine practice (Qian, 2015; Xu, 2016). The urban construction work and development did not follow the master plan strictly and the satellite towns did not get substantial development.

### 6.3.2 Four master plans since 1978

Since 1978, Tianjin has had four important master plans. The master plan making in post-reform period was a successive process. The 1986 master plan is the first official plan of Tianjin to be approved by the State Council. The latest plan has been compiled in 2016 and submitted to Tianjin Municipal Government for approval. Because of the recent political and planning system reform in China, it is still pending approval. With the establishment of Ministry of Natural Resources in 2018, the local planning departments began to reform accordingly. It is said that this master plan may be substituted by a new spatial plan (Interview, G27TJ). In order to keep the consistency and considering the timing of my fieldwork, this research focuses on the 2016 master plan for discourse analysis. The overview of these important master plans in Tianjin can be found below (Table 6.1). Key planning goals are exhibited for each plan.

**Table 6.1 Important Master plans since 1949**

MP	1954	1986	1999	2006	2016
<b>Planning Horizons</b>	1954-1974	1984-2000	1996-2010	2005-2020	2015-2030
<b>Approved by State Council</b>	No	Yes	Yes	Yes	Pending
<b>Planned Area</b>	Central District	Central District and Binhai area	City region (11919 km <sup>2</sup> )	City region (11919 km <sup>2</sup> )	City region (11919 km <sup>2</sup> )
<b>Projected Population (million)</b>	3	9.5	11	13.5	18
<b>Planned Urban construction land (km<sup>2</sup>)</b>	230 (Central District)	330 (Central District); 169 (Binhai Area)	556 (Central City)	1450 (city region)	2340 (city region)

Source: Summarized by author based on planning documents from TJMG (1986; 1999; 2006; 2016), TJPRCC (1994) and TJLRCC and TJPB (2015)

### 6.3.3 Key spatial concepts in Tianjin City Master Plans

Before conducting discourse analysis of planning, it is also necessary to clarify several important spatial concepts that are usually used in Tianjin City Master Plans. Some of these areas are dynamic, reflecting the different development stages of Tianjin. These spatial concepts are components of polycentric discourse because they are related to the scales at which the concept of polycentricity has been applied in Tianjin.

The first important spatial concept is ‘city region’ (*shiyu*). This refers to the whole area under the jurisdiction of Tianjin Municipal Government. As introduced in the political reform process in last section, Tianjin is no longer a single compact city in the central area but has evolved into a city-region. After 1979, it became stable and covers an area of 11,919 km<sup>2</sup>.

Lower than the city region scale, Central City (*zhongxin chengshi*) is another important geographic unit. Central City is the key construction and development area. With the process of urban growth, the area of Central City has enlarged dramatically. The dynamic change of



the spatial scope of Central City reflects a metropolitanisation process alongside rapid urbanisation. At the beginning, Central City was an equivalent of Central District (*zhongxin chengqu*) before the 1999 Master Plan. Then Central City incorporated the Binhai New Area and surrounding suburban districts. In the latest master plan compiled in 2016, Central City includes the area of Central District, four suburban districts and Binhai New Area, which covers an area of 4,351 km<sup>2</sup> in total.

Central City comprises two important urban cores in Tianjin's urban system. One is Central District and the other is Tianjin Binhai New Area (TBNA). Central District is relatively stable, and it mainly refers to the area within the Outer Ring Road. The planning area of Binhai New Area was also stable, but its political status changed during its development process. It has transformed from a functional area to an administrative district. TBNA generally includes the area covered by the former Tanggu, Hangu and Dagang Districts and parts of Dongli and Jinnan Districts. TBNA has a core area based on the original Tanggu District, which comprises Tianjin Economic-Technological Development Area (TEDA), Tanggu downtown and Tianjin port. The new CBD of Binhai New Area, proposed in 2007, was also included in the core area.

**Table 6.2 Spatial concepts in Tianjin City Master Plans**

<b>Spatial Concept</b>	<b>Composition</b>	<b>Area (km<sup>2</sup>)</b>	<b>Status</b>	<b>Application</b>
City Region ( <i>shiiyu</i> )	Jurisdictional area of Tianjin Municipal Government since 1979	11919.7	Stable	Master Plan 1986; 1999, 2006, 2016
Central City ( <i>zhongxin chengshi</i> )	Heping, Hedong, Hexi, Nankai, Hongqiao, Hebei, Jinnan, Dongli, Beichen, Xiqing and Binhai New Area	4351	Dynamic	Master Plan 1999, 2006, 2016
Central District ( <i>zhongxin chengqu</i> )	The inner area of Outer Ring Road	--	Stable	Master Plan 1986; 1999, 2006, 2016
Binhai New Area ( <i>Binhai xinqu</i> )	Binhai New Area (Tanggu, Hangu and Dagang)	2270	Stable	Master Plan 1999, 2006, 2016
Binhai New Area Core Zone ( <i>Binhai xinqu hexinqu</i> )	TEDA, Tanggu downtown, Tianjin port and Duty-free District, Binhai New Area CBD	--	Dynamic	Master Plan 2006, 2016

Source: Summarized by author based on planning documents from TJMG (1986; 1999; 2006; 2016)

Therefore, from a historical perspective, Tianjin City Region already exhibited a rudiment of polycentricity. At the city region scale, Tianjin has many urban settlements outside the original city, though the size and rank shows an evident hierarchy. The proposal of polycentricity in Tianjin City Region has economic and population bases to a certain degree. These settlements are separated by agricultural and green land. However, with the rapid urban growth and expansion, the central area of the city has been expanded into the suburban area and they fused into a metropolitan area. There exist multiple spatial scopes at different levels to regulate the future development in city master plans in Tianjin. In an overview of the application of polycentricity in different cities' master plans in China, Cheng and Shaw (2017) argue that there exist at least two or three levels at which the idea of polycentricity could be applied. Therefore, when carrying out the discourse analysis, geographic scales, the

inclusion and exclusion certain places, the creation of new spatial units are all related to the discourse about the spatial pattern.

## 6.4 The discourse of polycentricity in Tianjin's Master Plans

This section will carry out the Foucault-inspired discourse analysis introduced in the methodology chapter. The four master plans are the key objects for discourse analysis. Each version of the master plan in Tianjin is a three-book set, namely Outline, Atlas, and Statement. There are several chapters including the spatial elements in master plans. The language they use and the ways in which the spatial proposal is expressed and modified in different phrases will be investigated and compared. The interview materials will be used as a complementary to help researcher open the 'black box' of decision-making process, which involve politics, conflicts, rationality and planning knowledge.

### 6.4.1 Confirmation of polycentric urban settlements: the 1986 plan

From the late 1970s, China initiated a series of policies to revive urban planning. Tianjin was affected by the 1976 Tangshan earthquake, which held back the planning process and constrained the capacity of government to initiate new development. A new round of plan making started in 1982, much later than other large cities, and the resultant master plan was approved by the State Council in 1986.

The discourse of the 1986 Master Plan refers to a polycentric urban system, aiming to facilitate a degree of polycentricity among existing urban settlements. This discourse was largely framed by historical conditions and the domination of the central state. At that time, the central state had dominant power and lower level governments such as municipal government strictly followed the wider discourses that the central state holds. This results in few inter-scalar struggles and the polycentric discourse is therefore very straightforward. The storyline on size control integrates discursive and material practices of the central state.

Considering the historical development and administrative adjustment in pre-reform period, Tianjin was already a morphological polycentric city with multiple urban settlements having their own political seats and history. Therefore, in the 1980s, the idea of polycentricity was embedded in its master plans but there was no explicit application of the concept of

polycentricity and no intention to define these urban settlements as centres because of the limited size (Interview, G12TJ). As this interviewee argues:

*‘Because of China’s hierarchical political system, each district or county has its own government and therefore has a core area in its jurisdictional area. Since the 1980s, Tianjin has already shown a rudiment of polycentricity. With the further development in following decades, Tianjin is just evolving from a low degree of polycentricity to high degree of polycentricity, rather than from a single city to a polycentricity city. At the city region level, just the morphology, size and function of existing urban settlements changed in this process’ (Interview, G12TJ).*

At an early point in the reform era, central planning ideology shaped the main policy rhetoric in Tianjin. The discourse of the polycentric urban system was in line with central state policy that reasserted the urban development principle that had been first proposed in 1958: ‘Control the size of large cities, rationally develop medium cities, and rigorously develop small cities’ (Xie and Costa, 1993). Local government was required to compile an urban system plan for its jurisdiction according to the top-down Urban Planning Regulation (State Council, 1984). In response, the 1986 master plan combines the requirements of size control and new establishment of urban system. This plan claimed that it was compiled strictly following the central state’s development principle and a multi-level urban system was proposed, comprising the Central District, Binhai Area (the traditional port area of the city), satellite towns and county towns (TJMG, 1986: 2).

To justify this discourse, planners ascribed the urban problems of the 1980s to inefficient spatial layout. The purpose of the new polycentric urban system was said to be to ease urban problems and strictly control the size of the overcrowded Central District by the decentralisation of industry (TJMG, 1986: 3). The implication of such relocation was development dispersed to the Binhai Area and to previous satellite towns and the creation of a new industrial park. With reference to agglomeration diseconomies, an interpretation of Central Place Theory was employed to support the rationality of the future spatial pattern and new development outside the Central District. It was supposed that the formation of an urban system comprising large, medium and small settlements would become more efficient to promote economic development of both urban and rural areas, protect the natural environment and control urban size (TJMG, 1986: 3).

The proposed polycentric urban system was characterised by a clear hierarchy. The Central District was defined as the locus of politics, business, education and research, while Binhai Area and Satellite towns were destinations of industrial evacuation. County towns comprised the lowest tier and provided local service functions. In practice, planners used Central Place Theory less rigidly and combined it with a contradictory concept. The discourse of 'polycentric hierarchical settlements' was employed to stress the morphologically dispersed and historically formed settlements in Tianjin and, more importantly, to justify a settlement size control policy.

The adjustment of layers and rank-size distribution of urban system was intertwined also with power and rationalities. The upgrading of Binhai Area also reflected the central state's aspirations and interventions. At this time, it had begun innovative practices in the eastern coastal area of China, including the Special Economic Zones, Open Cities and National Economic and Technology Development Zones, in order to facilitate the reform and opening-up process. Planners and politicians from central and municipal levels both recognised that the port had not been fully exploited during the early planned economy period. A new special zone, the Tianjin Economic and Development Area (TEDA) (Figure 6.3), was approved by the central state in line with the designation of Tianjin as one of 14 Open Cities in 1984. A TEDA official told me that there were five schemes for the location choice of TEDA, all of which were near Tanggu port (Interview, G04BH). The final site selection had two considerations: First, this site was located on saline and alkaline land. If the reform experiments failed, governments could just close this area. Second, it was near to Tanggu Downtown to utilise its infrastructures and there were also two railways passing across TEDA (Interview, G04BH). TEDA was expected to engage in foreign investment and trade and as a gateway to global economy. The designation and development of TEDA got support from central state. The central state loaned money for the construction of initial area and the fiscal income could be retained by TEDA for further development (Interview, G04BH). With the advantage of the port and preferential policies, Tanggu district played an increasingly important role in Tianjin.

During the process of planning approval, the central state insisted that Tianjin include this designation in its master plan. A retired government official who was responsible for the first master plan making mentioned:

*'That Tianjin was listed as one Open City was a critical event. The master plan needs to be revised according to the new policy. The nature, function and structure has changed. I argue that the role of port should be enhanced. Tianjin port developed from a river port to an estuary port and to a seaport. Therefore, the central district and the port should be two cores. I proposed the dumbbell pattern. Mayor Ruihuan Li agreed with that but used another metaphor to describe this spatial pattern'* (Interview, G03TJ).

Meanwhile, municipal government proposed a new large industrial park as another important development in Binhai Area. Consequently, the spatial development strategy of Tianjin was switched to 'moving industries eastward' (*gongye dongyi*) (TJMG, 1986: 3, 10), which consolidated the importance of Binhai Area. A metaphor of balance was employed to describe this new structure: 'one stick shouldering two buckets' (*yige biandan tiaoliangtou*) (TJMG, 1986: 3). The stick covered the area of city proper, Tanggu district and the other four satellite towns. Two buckets referred to central district and Tanggu district, focusing on redevelopment and new industrial development respectively. This metaphor affected Tianjin's spatial structure for the following 20 years.

#### 6.4.2 Designing 'functional' polycentricity: the 1999 plan

The next master plan was prepared in 1994 and approved by the State Council in 1999. The discourse of polycentricity in this plan stressed functional specialisation among different clusters rather than just settlement morphology. The discursive changes were closely related to changes in institutional and governance form as well. The increasing power of municipal government reproduced its positioning and led to formation of new competing discourses. Therefore, new storyline on functional specialisation was proposed to organise these different ideas and formed a discourse of 'functional' polycentricity, reformed from previous polycentric settlement system. The new storyline also has influences on the claims of knowledge.

Tianjin faced a new political and economic environment in the early 1990s. The state launched reform of the land use and property rights system in order to establish land and housing markets in cities. With the transition to decentralisation, marketisation and globalisation (Wei and Jia, 2003), urban planning decisions had to be made in a new context

of cooperation between the state and the market, as well as between political interests and a new economic rationality (Zhu, 2000). Due to economic decentralization, municipal governments as the urban land agent, began to have more autonomy and thus tensions between central government and local government began to emerge, but with municipal, rather than central, government dominating planning discourse.

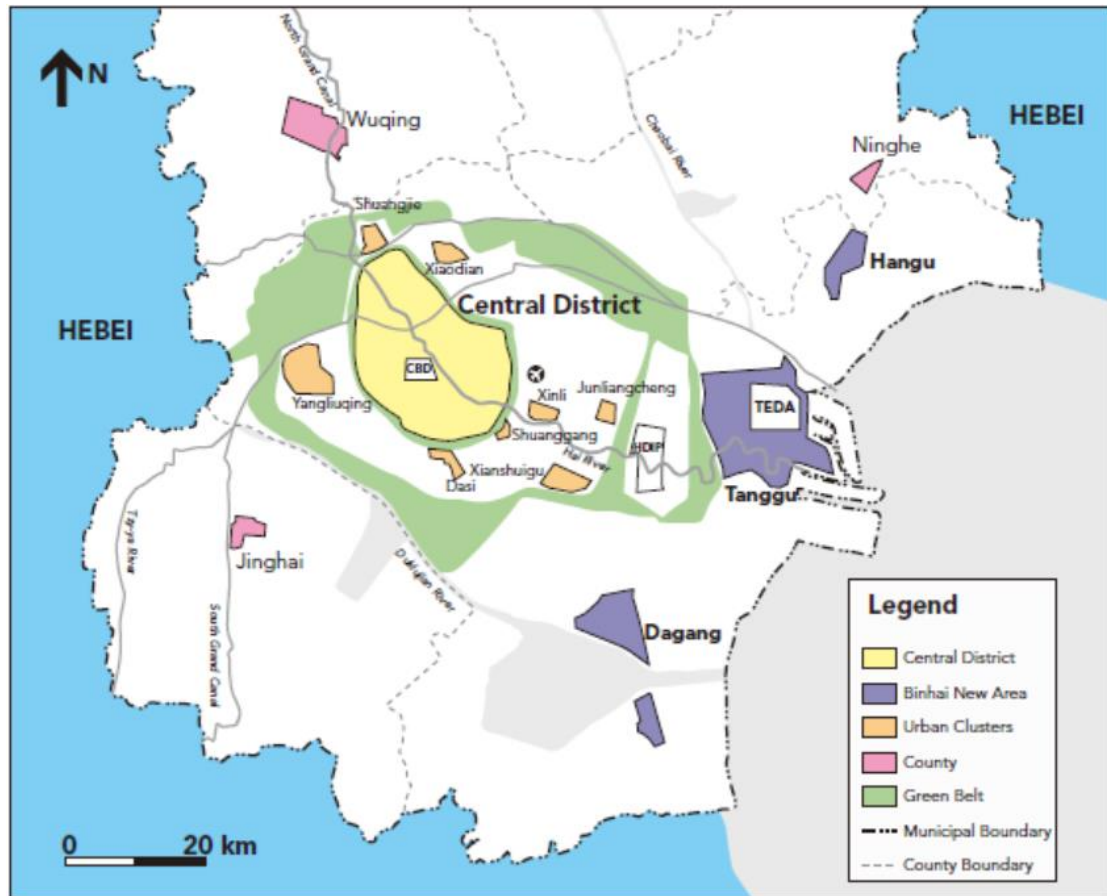
Although the central state still emphasised control of city size, the Tianjin Municipal Government showed great ambitions in economic growth, spatial expansion and intercity competition. The 1999 plan projected Tianjin as the economic centre of Bohai Region (the whole region surrounding Bohai Bay that includes Beijing-Tianjin-Hebei region and some parts of Shandong and Liaoning Provinces). To achieve this, it also sought to adjust Tianjin's dominant industry from manufacturing to services, projecting an increase in services from 39% to 55% by 2010 (TJMG, 1999: 2). To meet these new ambitions, the city government also realised the importance of the economic and commercial role of the city centre and planned a new Central Business District (CBD) and a Central Commercial District (CCD). The CBD was a key project to boost modern service industry and it was also intended as a place marketing tool as China emerged into the global economy. Unlike market driven development in North America, the CBD in Tianjin, and indeed elsewhere in China, is a government project and financed for its own purpose (Zacharias and Yang, 2016). Elsewhere in Tianjin, another five city-level commercial centres were proposed.

Although the overall spatial layout did not change significantly, the 1999 plan enlarged the planning area to the full territory of Tianjin. This plan proposed two different concepts, the Central District (*zhongxin chengqu*) and Central City (*zhongxin chengshi*), to distinguish the city centre area from the metropolitan area. The Central District focused on business and commercial activities and its spatial structure was adjusted to a 'multiple nucleated and clusters group pattern' (*duozhongxin zutuanshi*) (TJMG, 1999: 66). The spatial scope of Central City was extended to include the Binhai New Area and Tianjin Municipal Government applied to the central state to have Binhai designated as a national New Area in the same way as Shanghai Pudong, which was shortly rejected. Then in 1994 the municipal government decided to develop Binhai New Area without state help, supported by propaganda from key political leaders: 'basically to build up Binhai New Area within ten years' (TJLRCC and TJPB, 2015).

This strategy was based on the economic base of Binhai. The development of TEDA and the Duty-Free District was seen as a good achievement. In addition, this new strategy was a successor to the former plan. The newly planned Binhai New Area went far beyond the port to include a much larger coastal area with the intention of re-inventing its identity and invigorating development. A further eight urban clusters were also planned near the Central District for future expansion, which were projected to reach 65 km<sup>2</sup> with a population of 65,000 by 2010 (Figure 6.3) (TJMG, 1999). Central City was designated to be polycentric, comprising the Central District, Binhai New Area and eight urban clusters surrounding them (TJMG, 1999: 13). The majority of eight urban clusters were the satellite towns in last master plan. The main aim of surrounding clusters was still to undertake parts of Central District's functions.

The plan stressed the specialisation and functional interconnection between these urban centres. It encouraged service industry to agglomerate in the Central District; while Binhai New Area, as the new economic development focus, should develop port-related modern manufacturing, transportation and energy industries (TJMG, 1999: 7, 8). The surrounding clusters were to function as residential and centres of specialised high-tech industry. A green belt (Figure 6.3) was also employed to separate the Central District, its surrounding clusters and Binhai New Area (TJMG, 1999: 8). In summary, the overall thrust of the plan by an increasingly entrepreneurial municipal government was to promote the growth of Tianjin through the functional integration of self-funded area such as CBD and Binhai New Area. The central state's principle of controlling city size was discarded on the grounds that growth could be well managed through functional specialisation combined with some environmental protection.





**Figure 6.3 Polycentric vision in the 1999 Tianjin Master Plan (1996-2010)**

Source: Produced by author based on the 1999 Master Plan. Note: CBD - Central Business District; TEDA - Tianjin Economic and Technological Development Area; HDIP - Haihe Downstream Industrial Park.

#### 6.4.3 Creating polycentric growth nodes: the 2006 plan

Tianjin experienced significant growth of both GDP and population during the 1999 Master Plan period (Figure 6.1). The 2010 population target for the Central District was reached eight years in advance (TJLRCC and TJPB, 2015) so the 1999 master plan was quickly outdated. Therefore, Tianjin started a new round of plan making, culminating in the approval of a new master plan in 2006.

During the planning process for the 2006 plan, a new growth-oriented discourse coalition at various scales formed, and the plan became suffused with an undisguised entrepreneurial discourse, and promoted a polycentric spatial pattern consisting of many growth nodes. The essence of building new (sub)centres was large scale new construction for growth (Interview, G07TJ). However, the discourse of polycentric growth nodes consists of variegated new

centres with different agents back them. The return to a harmony discourse did not mean the unity of the rationality and claims for knowledge for these centres. In fact, they show distinctive features in terms of language expression, claims of knowledge and the institutionalised practices.

At the macro level, the central state had shifted its development emphasis to large cities. The 10th National Five-Year Plan (2001-2005) proposed urbanisation as the main approach to economic development (Wang and Shen, 2017) and the governance mode also began to be upscaled to (city)-region level (Wu, 2016). To facilitate economic growth and the competitiveness of the Beijing-Tianjin-Hebei region, Binhai New Area was upgraded to a national level New Area in the 11th National Five-year Plan (2006-2010), representing third growth pole of China after the Shenzhen Special Economic Zone and Shanghai Pudong New District (State Council, 2006). Therefore, the development of Binhai New Area was no longer just a local ambition, but also articulated contested interests at regional and national scales. After many years' development and accumulation, the economic scale, social function and status of Binhai New Area had been gradually enhanced (Interview, G06BH).

The spatial proposal for Central City was accordingly changed to 'two centres with multiple clusters' (*shuang zhongxin duo zutuan*). In contrast to the earlier plans, a new 'core' was identified within Binhai New Area and designated as 'the sub-centre of Tianjin' (*Tianjin fuzhongxin*) (TJMG, 2006: 11) in order to provide and enhance urban functions, such as business and finance services as well as public services. A new 'international' CBD, formed by state-led planning and investment, was also proposed for Binhai New Area. This was intended to integrate into global economic networks and enhance producer service functions and therefore for Binhai to become the engine of economic development not only for Bohai Region but the whole of Northern China (TJMG, 2006: 17). The upscaling of Binhai New Area in the polycentric system is a response to the central state's policy of the third growth pole.

The ideological changes of the central state and the intensity of local ambition further activated the entrepreneurialism of government, even at the district and county levels. By 2000, local states had become increasingly competitive, if over dependent on land-based finance (Zhu, 1999; Lin, 2002). At lower government levels, local growth-oriented discourses influenced the corresponding discourse in master plans. The classic concept 'New

Town' (*xincheng*) was employed in Tianjin to embrace the inter-scale growth vision. The 2006 plan, then, proposed eleven New Towns as a new component of the urban system, located at the secondary tier level. The storyline of this new discourse was 'to form a pattern of multiple growth poles' (*duoji zengzhang geju*) (TJMG, 2006: 12), i.e. to promote economic and urban expansion rather than any social objectives.

Most of the New Towns were not totally new but were formed through the expansion of former district and county towns. Two completely newly planned New Towns were proposed in Jinghai and Baodi Districts (Figure 6.4). During the interviews, officials from planning department and planners told me that the selection criteria for New Towns were based on two aspects. First, they are the administrative centre and economic centre of original suburban districts or counties. The construction of New Towns focuses on expanding the built-up areas of old towns. The second type is located where there has great resources endowment and some projects have been carried out there (Interview, G12TJ). For example, the Jingjin New Town in Baodi District is the second type of new town.

*'The concept of Jingjin New Town originates from a real estate company Hopson Development from Guangdong Province. Hopson Development launched a mega real estate project here. It is actually an entertainment project and high-end villas based on local spring water resources' (Interview, G03TJ).*

When these two counties were converted to urban districts in 2002, both revised their own master plans and proposed their own polycentric development through new sub-centres at a distance from the traditional county centres (TJLLRCC and TJPB, 2015). The conversion of counties to urban districts helped to strengthen the competitiveness of the central city, solve internal conflicts and consolidate metropolitan governance (Wu, 2016). Therefore, these polycentric concepts initially emerged among district officials and business representatives, but then eventually were included in the city master plan. The inclusion/exclusion strategy is used here to articulate local discourse into policy of polycentricity. Meanwhile, New Town development corporations were set up to take responsibility for plan making, land leasing, attracting investment and construction procurement, which reflects the institutional changes led from disruptive changes. In a nutshell, top-down planning principles and bottom-up development aspirations were merged into master plans by the Municipal Government

through a rescaling and selective strategy. The polycentric discourse became an articulation of the ambition of multi-level governments for economic growth and urban expansion.

#### 6.4.4 The emergence of nested polycentricity: the 2016 plan

The latest Tianjin master plan was completed and submitted to Tianjin Municipal Government for approval in 2016. It is still pending approval. It is evident from the draft that the discourse of polycentricity has become even more complicated and multi-faceted. More agents are involved in reshaping polycentric discourses. The power relations at interlocking scales have been reshuffled and multiple narratives regarding the spatial organisations have been deployed for distinct purposes, which leads to both the census and tensions between different agents. The new ideologies or wider discourses contribute to enlarged component elements to the new discourse of polycentricity. This plan adopts many urban development discourses associated with many different storylines. In this situation, the discourse of polycentricity shows its organising capacity to articulate them together at a variety of scales and dimensions. To legitimise the nested polycentricity, new planning tools and concepts are created and administrative system in Tianjin is restructured.

During the preparation of the 2016 plan, the national context changed. Facing the consequences of fast urbanisation, central government began to adjust its development principles in order to achieve ‘sustainable development’ and ‘social justice’, manifested in the National Plan on New Urbanization (2014-2020) (State Council, 2014). In addition, urban agglomerations (*chengshiqun*), consisting of several interacting cities within the same region, were selected as a new state space to reassert and enhance the central state’s governance capacity for social, economic and environmental crisis management beyond economic competitiveness (Li and Wu, 2012; Wu, 2016). In 2015, the central government approved a regional plan for Beijing, Tianjin and Hebei aimed at diluting the over-concentration of Beijing and promoting greater spatial balance within the region (State Council, 2015). This new policy rhetoric is incorporated in the 2016 Tianjin plan and therefore represents a new discursive turn.

The 2016 plan shows three significant changes in content relating to spatial structure. First, the city positioning, and development goals are proposed within the new context. The regional plan envisages the planned integration of the whole Beijing-Tianjin-Hebei region

into a polycentric urban region characterised by ‘one core, two cities, three axes, four districts, multiple nodes’ (*yihe shuangcheng sanzhou siqu duojiedian*) (State Council, 2015). Tianjin is identified as an important city but is subordinated to the core city Beijing and it is supposed to take on complementary functions.

Second, spatial governance, equity of public service and ‘ecological civilisation’ have also now become important planning elements. A spatial regulation plan is proposed, the main content of which is the demarcation of boundaries of designated ecological, basic farmland and urban development areas. This is supposed to provide a platform for the integration of multiple plans and sets the new morphological frame, characterised by large built up areas separated by ecological zones and farmland. In the chapter of spatial regulation, the three types of zones and their boundaries (which is also literally called ‘three lines and three zones’ in Chinese) are defined as follows:

- Permanent ecological area: 2,980 km<sup>2</sup>, accounting to 25% of total area
- Basic farmland area: 3,000 km<sup>2</sup>, accounting to 25.2% of total area
- Urban development area: 3410 km<sup>2</sup> for Tianjin City Region and 2,350 km<sup>2</sup> for Central City (TJMG, 2016: 17)

Based on the demarcation of ‘three zones and three lines’ (*sanqu sanxian*), the latest master plan defined three categories of area with different intensity of development control. They are development restricted zones, prohibited zones and permitted zones. The area of permitted zone is roughly equal to the area within Urban Development Boundary and the restricted zones allow for urban development only for necessary infrastructure construction and civil projects.

- Development restricted zone: 5,191 km<sup>2</sup>, accounting to 42.8% of total area
- Development prohibited zone: 3,533 km<sup>2</sup>, accounting to 29.1% of total area
- Development permitted zone: 3,410 km<sup>2</sup>, accounting to 28.1% of total area (TJMG, 2016: 19)

Third, the rescaling strategy of the central state has influenced the decision making of regional and urban authorities. In recent years, all counties in Tianjin have become urban districts for the better implementation of regional plan. There are newly planned

development nodes such as Jing-Jin Industrial City in Wuqing and Future Science Park in Ninghe have been promoted (Figure 6.4). The formation and site selection of these nodes results directly from a new development impetus within local district governments in the name of regional cooperation. However, the case of Jing-Jin Industrial City also illustrates the sway of central government over these newly created governance entities. Recently, because a green belt for environmental protection was designated in the 2018 Beijing City Master Plan, Jing-Jin Industrial City has had to be relocated out of way of the new green belt (Interview, G19WQ) (see more in chapter 8).

The demarcation of urban development area and urban growth boundary have framed the overall spatial pattern, but it does not propose a detailed spatial structure in terms of urban clusters hierarchy, size and functional relations. Following the spatial regulation, polycentric spatial pattern is applied to multiple geographical scales, ranging from the regional to the metropolitan, down to the Central District and Binhai New Area. At the city region scale, the overall spatial development strategy follows the idea of the non-statutory Tianjin Strategic Plan of 2009 (TJLRCC and TJPB, 2015) whose discourse of ‘twin cities, twin ports’ (*shuangcheng shuanggang*) was incorporated into the 2016 draft without any change (Zhu *et al.*, 2009; TJMG, 2016: 33). The relationship between Central District and Binhai New Area is supposed to ‘change from main centre and subcentre to two equivalent centres’ (TJMG, 2016, 33).

There are two reasons for this discursive transformation. First, although the Tianjin Strategic Plan is not a required element of the planning system, Tianjin Municipal Government legitimized it in an ordinance of 2011 and thereby gave it a legal basis (Interview, P01), so that its new spatial discourse must be followed in other plans, including the master plan. Second, Binhai New Area has undergone two rounds of administrative reform to ease the problem of political fragmentation. It is no longer merely an economic area but rather a vice-provincial level administrative district having more autonomy than the other urban districts, including the power of planning approval within its jurisdiction.

There have also been changes in the status and governance of the lower tiers of the urban system. On one hand, the urban functions of the outer suburban districts are emphasized, with the 2016 draft Master Plan claiming to transfer development zones to comprehensive functional areas (TJMG, 2016: 6). As a result, the former New Towns were split into two

tiers, namely ‘sub-cities’ (*fucheng*) and ‘functional clusters’ (*gongneng zutuan*) (Figure 6.4). On the other hand, the 2016 draft Master Plan argues that ‘the subjects of spatial governance for Tianjin city region should revert to administrative district management from functional zone management’ (TJMG, 2016: 25). The administrative centres of the outer suburban districts remain at the secondary tier while the new secondary centres in these districts are downgraded to third tier, functional clusters. The integration of clusters within sub-cities is also encouraged to promote their absolute importance, hence facilitating agglomeration economies (TJMG, 2016: 31).

This plan uses the term ‘Sub-cities’ in place of ‘New Towns’ because these places are no longer just function as growth poles but as centres for providing better, more comprehensive urban functions such as neighbourhood governance and public services (Interview, G12TJ). More accurately, the sub-city refers to the core urban area in the suburban districts (Interview, P05; G12TJ). However, the prefix ‘sub’ also implies that they are still subordinated to the Central District and Binhai New Area (Interview, G12TJ). The coercion on planning new towns or new cities from central state is another reason for the discursive changes.

*‘Because many media and press cover the ghost city and social problems countrywide in the ‘New Town Movement’, the MOHURD is launching a command to abate local enthusiasm for new plans that include a New Town programme. So, at the local level, the government and planners coin other concepts.’ (Interview, G11TJ)*

Newly planned new towns such as Jingjin New Town and Tuanbo New Town were then downgraded to a lower tier (TJMG, 2016). The municipal government is trying to save Jingjin New Town as much investment has been poured into it. A new high-speed railway connecting Beijing and Binhai New Area is under construction and a new station will be built in Jingjin New Town (Interview, P01). It is a kind of ‘spatial fix’ but the effect of this measure is still doubtful because this new town lacks industrial and employment base (Interview, G03TJ). Several newly planned development nodes are proposed and set as functional clusters. In sum, functional clusters are important development projects but there is a high degree of uncertainty over their future development (Interview, P05).

In the 2016 plan, the area of Central City is also further enlarged to cover the whole of the four suburban districts through a process of ‘metropolitanisation’. The role of important

urban clusters, such as Xiqing Sub-city, Jinnan Sub-city, Airport City, Eco-city and Dagang, is strengthened to support ‘network’ development (TJMG, 2016: 33). Central District and Binhai New Area both now consist of multiple centres. The former has ‘one main centre and five subcentres’ (*yizhu wufu*) (TJMG, 2016: 34) including two subcentres proposed in Tianjin Strategic Plan (TJLRCC and TJPB, 2015). The term ‘sub-centre’ was employed at the Central District scale for the first time in the Strategic plan. This master plan retains these two important centres and propose other new subcentres in Central District. The storyline of ‘balancing development of the north and south of Central District’ (*nanbei junheng fazhan*) was used to rationalise the proposal for the new Northern Area subcentre.

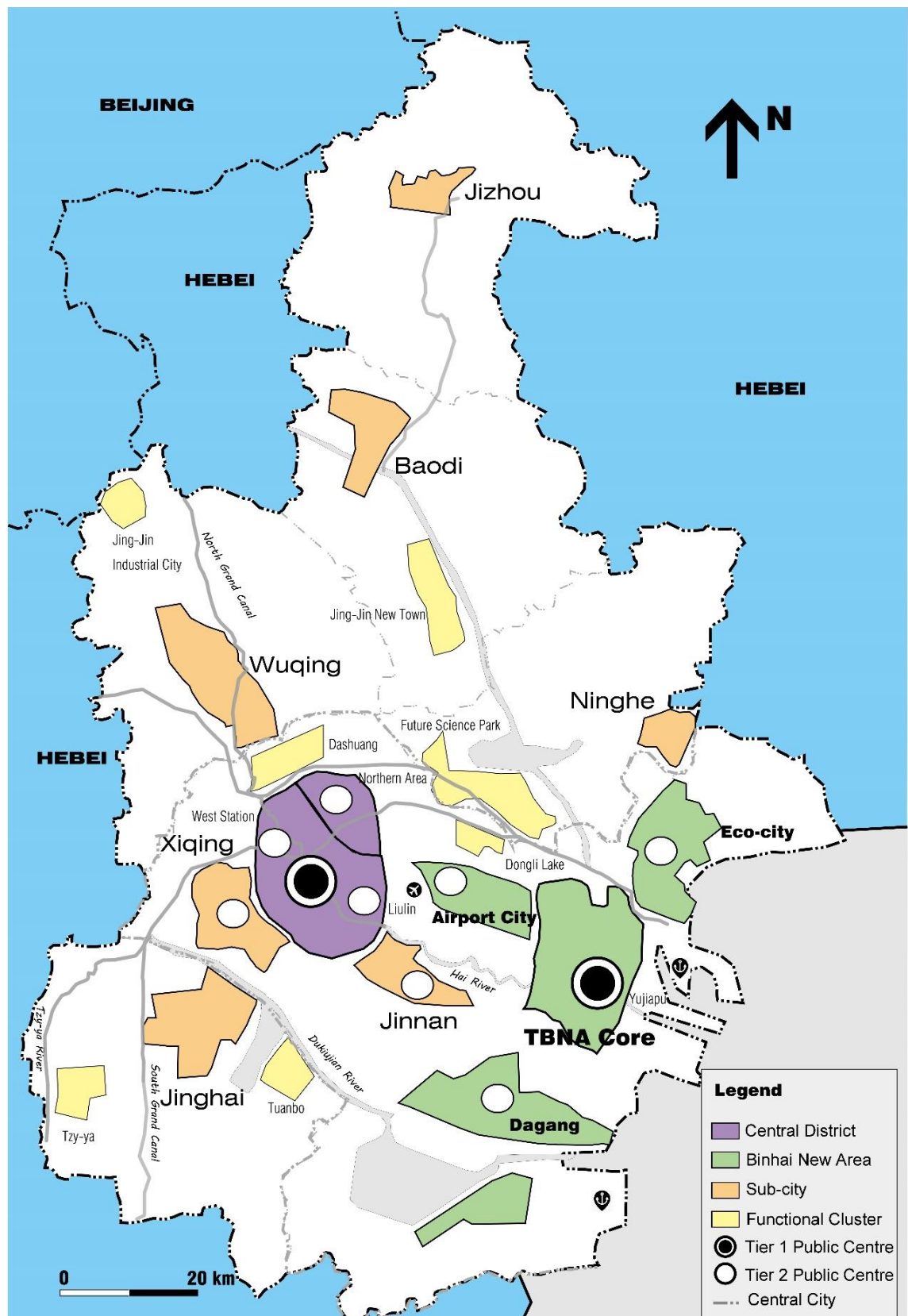
The new plan treats the Binhai New Area as a polycentric sub city-region. Learning from Randstad, Los Angeles and Shenzhen (Huo, 2016), it is proposed that Binhai New Area should have a spatial structure characterised by ‘polycentric, multiple clusters and networked city-region’ (*duozhongxin duozutuan wangluohua*) (TJMG, 2016: 46). Three subcentres in Binhai New Area are proposed based on the storyline of ‘integrating industrial and urban development’ (*chancheng ronghe*) (TJMG, 2016: 36).

These adjustments in location, spatial scope and governance are the result of the politics of scale in subtle ways. The traditional main centre in the Central District is fused with the mega-project called the Culture Centre (a collection of museums and other cultural venues alongside a new park) because of a key political leader’s special interest. Also, in the Central District, the Municipal Government took over the supervision of Liulin Subcentre from district government in order to enhance control of this key development area. On the coast, the Sino-Singaporean Eco-city replaced Hangu to become one of the sub-centres of the Binhai New Area, as it is national project that retains a high level of support from central government (Chang *et al.*, 2016).

The emergence of nested polycentricity also reflects growing functional complexity. Beyond the population distribution and commercial activities, the 2016 plan sketches a ‘public centre system’ (*gonggong zhongxin tixi*). The higher-level public centres are agglomerations of public facilities (management, health, education, etc.) serving the whole city region. The case for polycentricity begins by stressing the need to improve citizens’ access to public services by aligning their distribution more closely with everyday activities. Therefore, polycentricity is emerging in Tianjin in part as a servant of social cohesion policy rather than



merely a means to facilitate development, as a response to the imperatives by upper level government. This claim also aims to persuade the public, the potential audiences of master plan. It is noteworthy that many of the proposed public service centres overlap with the commercial centres (Figure 6.4), so that urban centres are tending to become increasingly comprehensive. In short, the discourse of polycentricity in the most recent master plan is nested, with multiple spatial elements and spatial scales. This discourse generally conforms with the development principles stipulated by upper level government. However, these discourses are selectively discussed and widely placed in the final planning output, so that the nested polycentricity is deployed coherently throughout the 2016 plan. It is a production both of municipal government's coordination between elements of the local developmental state and of the reassertion of regulation by the central state.



**Figure 6.4 Polycentric vision in 2016 draft Tianjin Master Plan (2015-2030)**

Source: Produced by author, based on the draft 2016 Master Plan

**Table 6.3 Discourse of polycentricity in Tianjin's Master Plans**

<b>Plan</b>	<b>Discourse of polycentricity</b>	<b>Geo-political context</b>	<b>Scales of polycentricity</b>	<b>Functional dimensions</b>	<b>Power relations</b>	<b>Rationality and constitutive knowledge</b>
<b>1986</b>	Polycentric urban settlements	Reform and Opening-up policy; Tangshan earthquake; Recovery of urban planning as routine practice;	Central District; City region;	Urban settlements; Commercial activities;	Domination of Central State through top-down regulation and policy selectivity	Agglomeration diseconomies; Spatial heterogeneity; Central Place Theory; Satellite Town;
<b>1999</b>	‘Functional’ polycentricity	Re-establishment of urban land and housing market; Success in TEDA and the Duty-Free District; Success of Pudong New Area in Shanghai;	Central District; Central City; City region;	Urban settlements; Commercial and business activities;	Domination of local state due to planning devolution and economy decentralisation	Agglomeration economy; Rent theory; Growth pole; Green Belt;
<b>2006</b>	Polycentric growth nodes	Entrepreneurialism and land-based finance; Authorisation of Binhai New Area as national development strategy;	Central City; Binhai New Area; City region;	Urban settlements; Commercial and business activities;	Growth coalition involving various level of governments and developers	Agglomeration economy (regional externalities); New Town; Growth pole;
<b>2016</b>	Nested polycentricity	New style urbanisation; City regionalism and regional urbanisation;	Central District; Binhai New Area; Central City; City region; Beijing-Tianjin-Hebei Urban Agglomeration	Urban settlements; Commercial and business activities; Public services;	Reassertion of central state’s regulation for crisis management; Inter-city cooperation and negotiation; Administrative and governance reform at local level; Influences of key politicians and planners;	Agglomeration economy; Growth Boundary; Urban network; Sustainability;

Source: Author’s research (Wang *et al.*, 2020)

## 6.5 Power relations, technical knowledge, and polycentric system of Tianjin

Based on the discussion above, it can be readily seen that polycentric development is generally a top-down process in China (Table 6.3). It is a spatial vision in planning rather than an outcome of urban development (Interview, P05). Over time, the relationship between power, knowledge and space has become increasingly complicated in these master plans. Different stakeholders play active roles in the discursive changes and spatial practice in terms of polycentric development of Tianjin. This section discusses the mutual relationship between multi-level governments and planning professionals in the discourse or vision (re)formation process. It also gives a summary about how the centres are defined and used as new space for their interests and how the polycentric system of Tianjin was proposed throughout the four versions of master plans.

### 6.5.1 Power relations between state actors

#### *Role and function of different tiers of government*

The discursive practice of polycentricity in Tianjin's planning involves multiple scales and strong state intervention. During this process, the changing inter-scale power relations have continually reshaped the discourse of polycentricity and its concrete content. Multi-level governments adopt different strategies and instruments to achieve their ends and interests.

First, the central state is located at the highest level of the policy regime. Prior to 1978, the central state exercised strong regulation power in spatial arrangements. Since the gradualism reform, the central-local relations have changed in the process of decentralisation, marketization and globalisation (Wei, 2012). The devolution of power has weakened the control of central state. However, the central state can still expand its institutional capacity to reassert its control and governance ability in multiple ways. Initially, the central state launched experimental policies in selective cities to facilitate the Reform and Opening-up Policy. Facing up to the new changes and challenges in macro environment, the central state would adjust the development principle to respond to the new changes. For example, the land use regulation or environmental regulation would be implemented strictly. Recently, the new city regional governance was regarded as a tool for crisis management for central

state. Political system adjustment and new regional plans are utilised to enhance central state control (Wu, 2016). These measures alter the discourse in many policy and planning documents. In addition, the projects designated and facilitated by central government will influence the spatial decision-making at lower scales. Central government frames the broad discourse in planning horizons and governments at lower levels will follow and incorporate these discourses in their own planning, considering the hierarchical administrative and planning approval system.

Secondly, the process of regionalisation is becoming significant with the rapid urbanisation and compression of time and space due to the technological advances in transport and communication. In addition, the rescaling strategy of the central state has transformed the (city) region into the key spatial unit for development and organisation. The emergence of regional governance and planning are generating great impacts on cities' positioning and spatial pattern. For the original peripheral areas, they find new opportunities for cross-boundary cooperation and attempt to build new functional relations with other areas during the regional coordinated development. The proposal for new development programmes and new regional plans will influence the discourse at municipal level, as they are good examples of regional coordination.

Thirdly, Tianjin Municipal Government is the most important agent in this scaled political system. Since the post-reform era, municipal government has taken responsibilities for economic growth and urban development. On one hand, they must embrace the national development principles and consider national projects in the plan making process since master plans have to be sanctioned by higher administration. On the other hand, the municipal government needs to coordinate inter-city relationships and simultaneously balance the bottom-up internal interests. In order to stimulate economic growth, Tianjin Municipal Government often proposes key development projects and arranges them in strategic locations. It also gives support to local district government. However, the municipal government cannot meet all the demands of districts because of resources and financial constraints and the pressure from the upper level, so it often adopts an inclusion and exclusion strategy to give priorities to selected projects. In this way, interests can be coordinated between municipal government and local districts government.

Last but not least, the local district governments also play an important role in the discursive formation. Current research emphasises inter-city competition and coordination. But in fact, the place selectivity for polycentricity at municipal level leads to rivalries between local district governments as well. To be or not to be a centre in the city is vital for local economic development. Polycentricity can be employed as a method of place promotion or city marketing so that local district governments can attract investment and economic programmes with the endorsement of municipal government (Interview, G07TJ; P03; P04). In addition, the centres are usually newly planned and developed. That means a large quota of construction land and a large amount of investment will be allocated to the selected places on the promise of economic prosperity and new fiscal income streams. In contrast, other districts that are not selected may carry many more social burdens such as public services provision and population management. This may lead to larger fiscal expenditure and fiscal deficit of district government (Interview, G17NK). Therefore, the mechanism for coordination between local districts competition and benefit redistributions are very important (*ibid.*). Moreover, due to the market-oriented reform, the local state tends to use its own resources to achieve economic growth. They may create new nodes by themselves or strive for mega projects (Interview, G09TJ). Their interests can be fulfilled by scaling up these projects to get supporting land use quota and policy approvals.

### ***Role and function of different government departments***

According to the spatial planning system in China, there exist multiple departments responsible for different kinds of plans making and approval. For example, the Development and Reform Commission is responsible for the Social and Economic Plans and Major Functional Area Plans. The Land Resources Bureau is responsible for the Land Use Master Plan and the Planning Bureau takes in charge of City Master Plan. Overlapping planning functions and planning subjects often cause conflicts over land use and spatial development (Wang and Shen, 2014; 2017). Both the technical and political factors lead to the deficiency of planning system and may lead to the uncoordinated implementation (*ibid.*).

As the spatial elements have been created in different plans, conflicts are inevitable. According to the polycentric research in Europe, the power contests and struggles take place between EU institutions, within EU institutions, within each sectoral policy area due to many reasons such as the divergence of planning and administrative cultural or the position of

countries and regions (Richardson and Jensen, 2000). However, based on my fieldwork, the conflicts between different departments in China regarding the polycentric vision are not as significant as the West, especially under the context of the integration trend of different plans.

According to the interviews with governmental officials and professionals, there exist three main reasons for the well-coordinated relations between different departments. First, as the polycentric development is a relatively macro development strategy, there is no obvious conflicts. The different departments have their own responsibility and resources to support the polycentric development. For example, the transport sector is responsible for improving connectivity of new centres through road and public transport construction (Interview, G09TJ; G10TJ). The conflicts often emerge for concrete projects because different departments have their own codes of practice and regulation (Interview, G15DL; G4BH). The incompatibility of land use between the land department and urban planning department is the most significant.

*'The Tianjin Planning Bureau leads the master plan making and decides the future development strategy and spatial pattern. Once the plan is completed, the planning bureau will seek opinions from related departments, district governments. After that, all departments achieve consensus and the plan will be submitted to municipal government for approval. But sometimes, when constructing concrete projects according to this plan, some departments or district governments began to realise problems and to bargain with other departments.'* (Interview, G16TJ)

Secondly, because of the integration trend, the incompatibility between different plans has decreased. For the latest plan cycle, the overall spatial structural was determined by the 'three zones and three lines' (Interview, P01; P02). The boundaries are determined by the negotiation of Tianjin Bureau of Land Resources and Housing Administration (TJBLRHA) and Tianjin Development and Reform Commission (TJDRC), Planning Bureau and environment departments. This provides the accurate quota and strict control for development and therefore the conflicts between land and environment protection and development has been reduced.

Third, different departments and district governments are all governed by the municipal government (Interview, G14DL; G12TJ). As the government official argued,

*'There is only one single municipal government behind them. Therefore, in terms of urban development strategy, they will not break or violate municipal government strategy.'* (Interview, G12TJ)

Even conflicts emerge in the implementation process, they can be solved through the negotiation between different departments and coordination by municipal government (Interview, G04BH).

### 6.5.2 Role of planning professionals

Since the 1980s, urban planning in China has been required to be developed by professional planning institutes, which were separated from government. Governments commission the plan making to professional institutes through government procurement and they are mainly responsible for planning approval, management, and implementation. City Master Plans are developed by Chinese planning institutes. These institutes absorb western planning ideas and cooperate with international and domestic institutes and companies in the plan-making process. Academics also participate in the master plan-making process. They may act as professionals to undertake subject plans (parts of master plans) and strategic plans, or they may be employed as specialists in planning review and approval process.

The task of plan making in Tianjin is usually assigned to the China Academy of Urban Planning and Design (CAUPD) and Tianjin Academy of Urban Planning and Design (TAUPD). CAUPD and TAUPD are public institutions affiliated to Ministry of Housing and Urban-Rural Development and Tianjin Planning Bureau. According to interviews with planners from these two institutes and academics participating in plan making process, planning professions are intertwined with the political powers to shape the discourse of polycentricity.

In the planners' academic training, the multiple clusters (*duozutuan*) spatial pattern is taught as a rational and ideal spatial pattern in the textbook (Interview, G07TJ; G12TJ). As one planner who was responsible for the master plan and strategic plan making said,

*'The subject of urban planning lacks theoretical foundations. China's physical planners use the traditional urban ecology theory proposed by Chicago School to*



*guide the physical urban structure because this school focuses on the physical spatial pattern.’ (Interview, P05)*

Considering the large size of Chinese cities, a multiple cluster development mode was regarded as a universal principle for urban planning (Interview, P04). The polycentric spatial pattern is regarded as a more advanced multiple clustered pattern, which highlights several key clusters with important urban or economic functions (Interview, G12TJ). Urban sprawl which is also called ‘pancake’ spatial pattern in large cities has received much criticism and therefore the shift from monocentricity to polycentricity is a kind of political correctness (Interview, P04; P05).

Also, planners recognise the politicians’ intentions and provide professional advice to them. On one hand, planners employ classical and updated planning concepts or coin new concepts to justify the politician’s pursuit, as discussed in the discourse analysis (Table 6.3). In China, planners are representatives of government according to the principles of ‘governmental organisation, expert leadership, departmental coordination, public participation and scientific decision-making’ that should be complied with in the formulation of any city planning (Interview, P05; MOC, 2005). Governments organise the plan making process and has the final decision-making power. The political leaders in Tianjin tend to impose their own ideas on planners. The planning department in Tianjin is very powerful because many municipal leaders (such as mayors) were promoted from planning departments (Interview, G03TJ; P01). On the other hand, planners provide rational schemes for consideration, such as the site selection of new centres. Planners have their ethics and emphasise rationality and public interests. They compromise with political power, but meanwhile try their best to make the final plan more feasible and scientific. For example, when the political leaders of Tianjin decide to develop subcentres in Central District, planners suggested the number of subcentres should not be too many.

*‘At beginning, Tianjin’s government want to propose five or six centres. After several round of discussion, we recommended two subcentres considering the constraint of finance and resources.’ (Interview, P05)*

### 6.5.3 Polycentric system and conceived centres in Tianjin

After four rounds of master plans, Tianjin has shown a significant polycentric vision. The polycentric system in Tianjin consists of different types of centres. Due to the changing planning concepts, and the unclear boundaries and of dynamic status of key nodes, the polycentric system is complex and difficult to understand. Generally, the polycentric system can be divided into two types at two scales. At the city regional level, the polycentric system refers to the multiple urban settlements and newly planned clusters. Almost each district in suburban area has two key nodes now. As one of interviewees told me, it just looks like micro ‘twin cities’ at district level (Interview, P01).

At Central City level, the centres in polycentric system refer to the agglomeration of urban functions such as commercial and business activities and public services (Interview, G07TJ; G08TJ). Table 6.4 below lists the key nodes identified by the analysis of planning documents. According to the historical foundation, the development could be categorized to two groups, namely historical settlements with continuous expansion and entirely newly planned nodes. The evolution process of centres in the planning is heterogenous because of the different roles they play in the polycentric system. Therefore, the difference in rationales, development trajectories and consolidation approach between centres demand much more detailed research.

More importantly, interviewees’ perceptions about these centres, in terms of their development status and development potentials, are quite different. At a rough scale, Central District, Binhai New Area Core Zone and Wuqing District are regarded as centres in Tianjin’s urban system. The key nodes located within Central City, such as West Station Sub-centre, Liulin Sub-centre, Airport City and Eco-city are believed have greater potentials to become emerging centres after a long-term preparation (Interview, P03; G06BH). In the outer suburban districts, Jinghai District is expected to become an important node in Tianjin’s urban system as it is close to the new national mega project, Xiong’an New Area (Interview, A02; G03TJ). The identity of centres provides criteria for embedded case selection in the following chapters.

**Table 6.4 Selected characteristics of the centres**

Scale		Centres	Development mode	Evolution process in Planning	Identity	
City region	Central District	Xiaobailou	Newly planned	CBD + public centre	√	
		West Station Sub-centre	Newly planned	Sub-centre+ public centre	○	
		Liulin Subcentre	Newly planned	Sub-centre + public centre	○	
		Northern Area Subcentre	Newly planned	Public centre		
	Binhai New Area	Binhai New Area Core	Historical settlement + new expansion	TEDA + Yujiapu CBD + Public centre	√	
		Airport City	Newly planned	Sub-centre + public centre	○	
		Eco-city	Historical settlement + new expansion	Sub-centre + public centre	○	
		Dagang City	Historical settlement + new expansion	Sub-centre + public centre		
	Suburban Districts	Xiqing Sub-ctiy	Historical settlement + new expansion	Satellite Town →New Town→ Sub-city+ public centre	○	
		Jinnan Sub-city	Historical settlement + new expansion	Satellite Town →New Town→ Sub-city+ public centre	○	
		Dongli Lake	Newly planned	Functional cluster		
		Dashuang	Newly planned	Functional cluster		
	Exurban Districts	Wuqing District	Wuqing Sub-city	Historical settlement + new expansion	County town → New Town→ Sub-city	√
			Jing-Jin Industrial City	Newly planned	Functional cluster	
		Jinghai District	Jinghai Sub-city	Historical settlement + new expansion	County town → New Town→ Sub-city	○
			Tzy-ya	Newly planned	Functional cluster	
			Tuanbo New Town	Newly planned	New Town→ Functional cluster	
		Baodi District	Baodi Sub-city	Historical settlement + new expansion	County town → New Town→ Sub-city	
			Jing-Jin New Town	Newly planned	New Town→ Functional cluster	
		Ninghe District	Ninghe Sub-ctiy	Historical settlement + new expansion	County town → New Town→ Sub-city	
			Future Science Park	Newly planned	Functional cluster	
		Jizhou District	Jizhou Sub-city	Historical settlement + new expansion	County town → New Town→ Sub-city	

Source: Summarized by author. Note: √ means the centres are regarded as centres of Tianjin in interviewees' perception. ○ means the centres have greater development potential in near future.

## 6.6 Conclusion and discussion

This chapter employs discourse analysis to explore the construction and evolution of distinctive discourses of polycentricity in Tianjin City Master Plans. Through an analysis of four versions of master plans supplemented by planning archives and interviews, the changes in nuance and underlying power relations in the discursive remaking process are examined. The experience of Tianjin shows understanding polycentric practice in China should not be restricted to a technical interpretation because it also involves scalar politics, the creation of new urban identities, and normative rhetoric.

First, polycentricity is a malleable concept and its conceptual substance evolved over time (Table 6.3) (Wang *et al.*, 2020). Tianjin has a long tradition to pursue polycentric development because of its specific history and political system. These specific contexts also lead to a rudimentary polycentric spatial pattern characterised by historical urban settlements, which also complicated the application of polycentricity in Tianjin. Since the reform policy, Tianjin has made four key master plans in different development stages. Significant discursive turns can be identified in these master plans. In the first official master plan, polycentricity was an embedded urban system concept. With the transition to the socialist market economy, urban planning then became an instrument for growth. In the 1999 Master Plan, specialisation and exploitation of the advantages of the CBD and port became the focal point of the polycentric spatial pattern. In the 2006 Master Plan, the discourse of polycentric growth nodes was enhanced by an emerging pro-growth coalition including the central state, municipal government, local district governments, and developers. In the most recent draft plan, the meaning of polycentricity has become much more complicated, influenced by city-regionalisation theory and the ideology of sustainability, while still holding on to the idea of polycentricity as a ‘rational’ approach to spatial planning. Polycentricity has become a normative agenda among a wide range of geographic units, with conflicting objectives. Another new dimension is that polycentric planning no longer only applies to population and economic activity, but also to the delivery of public services, which has been converged into the concept of polycentricity. Meanwhile, the hierarchy between centres is supposedly becoming less significant so the networked and integrated relationship between centres is emphasised. Therefore, Chinese intra-urban polycentricity is emerging as a hybrid of the polycentric city and the polycentric urban region as practiced in Western planning.

Secondly, evidence from Tianjin also shows that the production and legitimization of distinct discourses is primarily a political and multi-scalar process, although it considers urban reality to a certain extent (Wang *et al.*, 2020). With respect to rationality, the decentralisation trend that was the result of the development of modern infrastructure and market reform was a key driver of an increasingly polycentric spatial pattern. The distinctive Tianjin city administrative framework also provided a prototype for polycentric urban settlements. Successive plans defined the major problems and corresponding solutions under given geo-political conditions through attempts to optimise the urban structure. The plans do employ theories like agglomeration economies and urban network theories to support the spatial proposals. Nonetheless, the recent discursive transition of polycentric development reflects political intentions to a much larger extent. Many newly planned and developed centres have become ‘conceived space’, as proposed by Lefebvre (1991) that is place for practices of power. The state and a technological bureaucracy dominate their development, identity, and governance.

Thirdly, the study shows that inter-scalar power relations and conflicts are masked by the technical rationality of planning. The formation of polycentric discourse reflects the shift of planning ideologies but also the power embedded in the institutionalisation process. Within changing central and local relations and the interaction of planning factors and market factors, there are increasing numbers of agents participating in the production of planning rhetoric. Multiple scalar states and important actors adopt different strategies to achieve distinct aims and to legitimate their practices. The discourses of polycentricity, acting as ‘policy glue’, are an articulation of multi-scalar power in China, rather than a process of systematic, technical analysis. The fuzziness and fluidity of the concept creates space to accommodate consensus or to allow the play of contested interests and policy experiments.

Lastly, the planning rationality, evolution process and spatial outcome of these centres are heterogeneous (Table 6.4). The heterogeneity is derived from their different political and economic power, different locations, strategies, and development tools they adopt. Therefore, based on the centre system in Tianjin’s polycentric vision, next two chapters will focus on specific centres in more detail. Centres in Binhai New Area Core Zone, Wuqing District and Dongli District will be selected, as they have shown their importance in new planning discourse as well as in the actual development of Tianjin.

## **Chapter 7 Forging a new centre in TBNA: the birth and death of Yujiapu Central Business District**

### **7.1 Introduction**

According to the overview of Tianjin City Master Plans in last chapter, the discourses of polycentricity have been used as ‘policy glue’ to articulate multi-scalar power relations and interests in Tianjin. Therefore, centres in the polycentric system of Tianjin were created and formed according to different logics and contexts. A portfolio of tools and instruments were employed by various main actors and new centres experienced distinct development trajectories during the implementation process. This chapter and next chapter focus on several new centres in Tianjin’s planned polycentric system to explore why and how specific centres have been planned, developed and consolidated by investigating the political process, planning rationalities and spatial materialization process. The analytical framework proposed in chapter five is also suitable for the analysis of specific centres. Key elements in the analytical framework are also the major themes analysed in these two chapters, which frame the formation process of individual centres. Interviews with governmental officials, planners and academics, developers, and documents from both public sources and internal reports provide detailed and in-depth information.

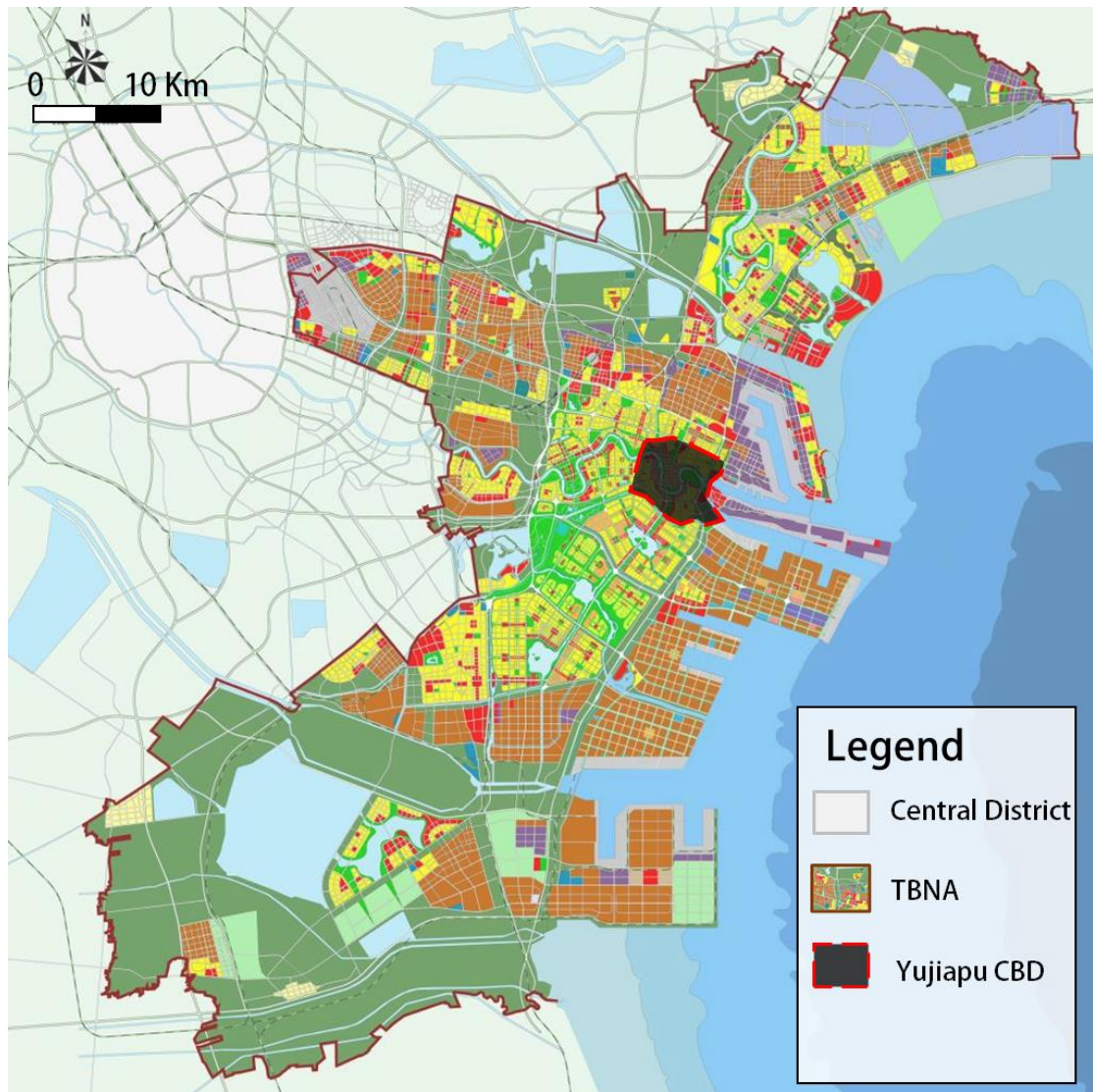
This chapter employs a new CBD in Tianjin Binhai New Area (TBNA) as the first embedded case. TBNA has always played an important role in Tianjin’s urban system throughout the post-reform period. Its core area has been upgraded from an industrial base to Tianjin’s subcentre and then to a parallel city to Tianjin Central District recently. Since the 2006 Tianjin City Master Plan, a new CBD has been proposed in order to rebuild the function and identity of TBNA Core Zone and hence to encourage Tianjin towards a more polycentric urban form. The newly planned Yujiapu CBD, a synthesis centre of TBNA Core Zone, an international CBD and a regional public centre, is regarded as one of the most important centres in Tianjin in its spatial vision. It is also a symbolic place frequently mentioned by interviewees when discussing polycentric development of Tianjin. As the flagship project of TBNA, Yujiapu CBD has been under construction for more than ten years. During this period, it has experienced substantial changes in terms of built environment, function and identity. Recently, new clues about the future of Yujiapu have emerged. Therefore, it is an

opportune moment to review its formation and consolidation process and to assess its contribution to the polycentric development of Tianjin.

This chapter aims to investigate why and how Yujiapu CBD has been proposed and developed in TBNA and, more importantly, to explore the underlying power relations, development approaches and consequences during the materialization process. This chapter first introduces the development history of TBNA in terms of its rising socio-economic and political status, corresponding governance reform and planning revisions. This part expands these three aspects in more detail based on the general development history of TBNA that have been mentioned in chapter six. The detailed context provides the historical and political background to the proposal for Yujiapu CBD. Then, the chapter introduces the plan making process of Yujiapu CBD in detail. More importantly, it introduces the political and technical rationales for the construction of Yujiapu CBD. Following that, the chapter attaches greater attention to the governance mode of Yujiapu CBD and discusses how the new CBD was built under coalition of multi-level governments with different resources and capacities to consolidate its new centrality. After that, the changes in physical built environment, social components and identity of the CBD are analysed and a critical assessment of whether it has successfully become a genuine centre for both TBNA and Tianjin was given finally. The analysis is mainly based on the interviews with government officials, planners and public or internal documents collected in the field.

## 7.2 Context for the designation of a new CBD in TBNA

TBNA, located to the Bohai Bay, is the coastal area of Tianjin. It was initially an economic development zone proposed for industrial development, which comprises three old coastal districts: Tanggu, Hangu and Dagang and the adjacent parts of Dongli and Jinnan District, covering an area of 2,270 km<sup>2</sup> (Figure 7.1). After several rounds of administrative adjustments, TBNA has been converted to an administrative district through the annexation of Tanggu, Hangu and Dagang. Although the administrative area is equivalent to the area of former three districts, around 1,900 km<sup>2</sup>, its jurisdiction and planning area of TBNA goes beyond its administrative boundary and still includes parts of Dongli and Jinnan District.



**Figure 7.1 Planning area of TBNA and the location of Yujiapu CBD**

Source: Adapted by author, based on map from Huo (2016)

TBNA is treated as a sub city-region rather than simply an urban district of Tianjin by planners (Interview, P01). TBNA exhibits several features of a city-region. First, it covers a large geographical area. Its spatial scope, economic importance, built-up area and population are even larger than normal cities. Second, due to historical and political factors, TBNA consists of several historical separated urban settlements and new designation of functional zones. Before the administrative annexation, they were governed by different governments at the same level. This area is still characterised by the coexistence of multiple governance bodies after the governance reform in TBNA. Third, the functional area and jurisdictional area of TBNA have penetrated its administrative boundary.



The features of TBNA make the urban structure of Tianjin unique in China. From the view of the Chief Planner of Tianjin Academy of Urban Planning and Design Binhai Division, TBNA is a significant secondary urban centre in Tianjin's urban system. As he argued,

*'Tianjin is the most typical polycentric city in China to my knowledge. It is difficult to find another city in China whose secondary urban centre has such a large scale as TBNA. There are no other cities that have shown spatial structure characterised by two major central areas (twin cities) within its jurisdiction.'* (Interview, P01)

Moreover, these features also complicated the internal relationships within TBNA (Interview, P01; G04BH). Therefore, this section reviews the evolutionary process of TBNA to clarify its spatial organisation and internal governance, especially the relationship between Yujiapu CBD and TBNA.

### 7.2.1 The rise of TBNA as a new city (region) in Tianjin

TBNA is not totally new. This area became an industrial and military base in the 19<sup>th</sup> century and the coastal area around Tanggu was the birthplace of modern industries in North China (Huo, 2016). After the foundation of PRC, Tanggu District was established here and then annexed to Tianjin in 1952. Historical industrial establishments such as Tianjin Alkali Factory, Tianjin Chemical Factory, and Tianjin Dagang Chemical Factory remained the backbone of industry in the coastal area. Hangu district became a district of Tianjin in 1962, which was converted from a county level city. Since the 1960s, the coastal area has become an energy production and related manufacturing industrial base because of the discovery and exploitation of Dagang Oilfield (Wei and Jia, 2003). Based on the construction of Dagang Oilfield and new development of oilfield settlements, a new administrative district Dagang District was founded in 1979. By then, the coastal area of Tianjin comprised three districts characterised by separated urban settlements and specialised industrial activities.

Before 1978, Tianjin's development was concentrated within the central area of Tianjin. Since the implementation of Reform and Opening-up policy, TBNA has gained much more attention from governments and planners. It has played an increasingly important role in both urban and regional development because of its abundant land and natural resources, access to the port of Tianjin and good industrial foundation (Interview, G06BH). As early

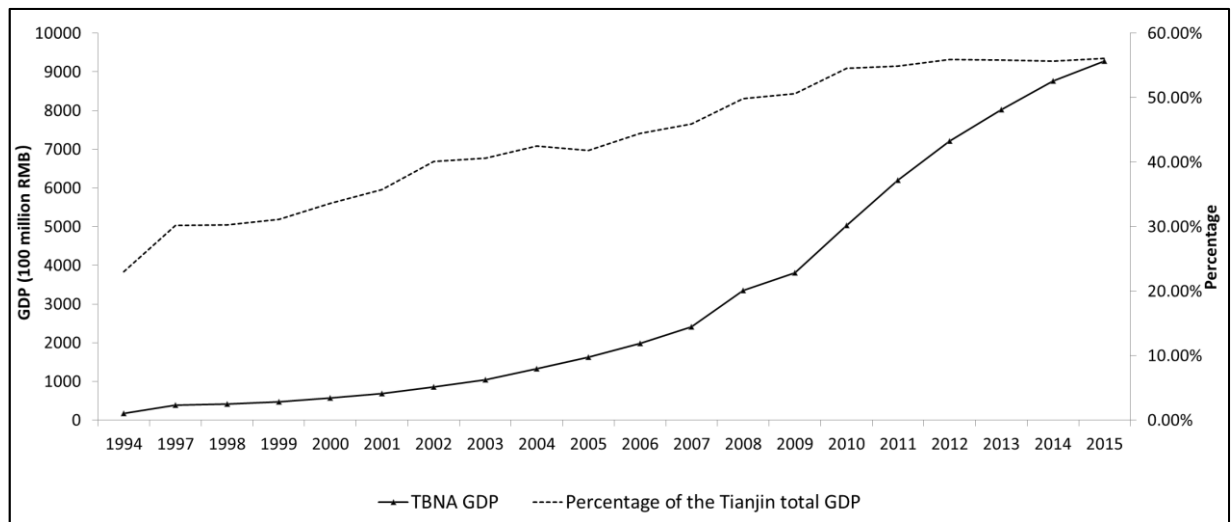
as the 1980s, the importance of the coastal area in Tianjin urban system was emphasized and this area was confirmed as the future development focus for industry in Tianjin City Master Plan. In 1984, Tianjin was designated as one of fourteen Open Coastal Cities, which enjoy more free-market-oriented policies to foreign investment and business. Corresponding to this policy, the Tianjin Economic-Technological Development Area (TEDA) was established in Tanggu. TEDA has contributed to the economic development of TBNA and further enhanced the importance of coastal area in Tianjin's urban system.

Until 1994, the explicit concept of 'Tianjin Binhai New Area' was first proposed by Tianjin Municipal Government, which marked the beginning of transition of TBNA from separate urban districts and development zones to an integrated sub-region of Tianjin. By this time, TEDA had become the leading development zone nationwide. It had attracted many large multinational companies such as Motorola and Samsung (Interview, G04BH). The ambitious plan of TBNA was based on the success of TEDA and the Free Trade Zone of Tianjin Port (TJLRCC and TJPB, 2015). To support the development of TBNA, Tianjin Municipal Government gave priority to TBNA and allocated resources such as the airport and key industrial projects to the jurisdictional area of TBNA.

After becoming the municipal development strategy for twelve years, TBNA finally gained the central state's support and was upscaled to a national level New Area in 2006. TBNA was the second national-level New Area in China after Shanghai Pudong New Area, designated in 1992. The reasons for upscaling TBNA as a national strategy involved the interests of governments at many levels (Interview, A02). Tianjin Municipal Government attempted to seek policy and financial support from the central state, especially after several previous political leaders, such as Party Secretary of Tianjin Lichang Zhang, were promoted to the Politburo of the Communist Party of China (Interview, G03TJ). If it were to succeed, TBNA would receive preferential treatment and financial support. For the central state, the development of Tianjin Binhai New Area would help to improve the region's competitiveness and facilitate regional balance. The re-emergence of regionalisation since the 2000s is regarded as a response to administrative fragmentation and excessive competition between cities caused by urban entrepreneurialism (Li and Wu, 2012). At that time, the other two urban agglomerations, Yangtze River Delta and Pearl River Delta, were developing much faster than Beijing-Tianjin-Hebei Region. Also, the competition between Beijing and Tianjin had become increasingly intense (Interview, G07TJ). Therefore, Tianjin Binhai

New Area could be employed as the ‘common element’ (jiegou gongtong dian) for the regional development (Huo, 2016). Therefore, in the document *Suggestions on Promoting Binhai New Area Development and Opening Up* (State Council, 2006), Tianjin Binhai New Area was regarded as the third growth pole of China, which would allow the region to catch up with the Pearl and Yangtze River Deltas as well a means to facilitate regional cooperation within Beijing-Tianjin-Hebei Region.

With support from municipal and central states, TBNA has experienced a rapid economic growth and urban expansion since 2006. In 1994, the GDP of Binhai New Area was less than 17 billion Yuan, which accounted for 23 percent of Tianjin’s GDP. By 2015, this figure had increased to 927 billion Yuan, accounting 56 percent of GDP (Figure 7.2). So far, the central state has approved nineteen national level New Areas in total and TBNA is the second largest in terms of GDP. The built-up area of TBNA almost doubled between 2005 and 2016 (Huo, 2016). Together with the economic development, the permanent population also increased dramatically, with the total population nearly reaching 3 million by 2015, the majority of whom are new migrants (Interview, G06BH). According to these statistical data, TBNA is transforming from a traditional industrial base to a new central urban area of Tianjin.



**Figure 7.2 The economic growth of Binhai New Area 1994-2014**

Source: TBNASB, Tianjin Binhai New Area Statistical Yearbooks, various years

### 7.2.2 Governance reform in TBNA

Along with the different development stages, TBNA has experienced several rounds of governance reform. Initially, TBNA was an economic zone with few responsibilities for social development. The functional zones (e.g. TEDA, TPFTZ) and three districts (Tanggu, Hangu, Dagang) were administratively independent, each governed by their own district governments and administrative committees. After TBNA was proposed in 1994, Tianjin Municipal Government established a steering office in the following year to coordinate affairs and conflicts. However, the administrative power of the steering office was weak. In 2000, the Administrative Committee of TBNA replaced the steering office and took responsibilities for plan making, industrial projects, infrastructure construction and coordination between the different districts and functional zones. The difference is that the director of the Administrative Committee was an appointed member of standing committee of the CCP Tianjin Committee. That means the leadership of TBNA was upgraded from bureau level to deputy-ministerial level in the political system, so that higher-level cadres have ability to perform the coordination function for TBNA (Zhu and Sun, 2009).

Nevertheless, the fragmented administration system was still blamed as the most significant block to the development of TBNA (*ibid.*). After TBNA was upgraded and included in the national development strategy, one of the main tasks was to manage conflict between local governments and hence to facilitate the development and opening up of TBNA. In 2009, learning from Shanghai Pudong New Area, TBNA District Government, a sub-provincial district, was established by the annexation of Tanggu, Hangu and Dagang districts (Interview, G04BH). The parts in Dongli and Jinnan Districts were also put under the jurisdiction of TBNA Government and included into the planning area of TBNA for economic development purposes (Interview, G04BH). To guarantee that administrative innovation could be implemented smoothly, the lower level governments within TBNA were organised in two types. The first type was Administrative Committees of Tanggu, Hangu, Dagang, which were the legacy of previous district governments and were mainly responsible for the social affairs in their jurisdiction. The second type was the Administrative Committees of functional zones (*gongnengqu*), which mainly undertook economic functions. In TBNA second round administrative reform in 2013, the Administrative Committees of Tanggu, Hangu, Dagang were abolished and the power of social governance was further decentralised to the towns and sub-districts.

Through a series of administrative reforms, the boundary effects caused by the co-existence of several districts have been further weakened. Governance reform in TBNA also lifted the status of TBNA and gave much more autonomy to TBNA Government (Interview, P01). With the abolishment of former district governments, functional zones have become major components of TBNA. Yujiapu CBD is one of the most important functional zones, which was newly established after it was upscaled to a national level New Area. The governance framework of Yujiapu CBD was reshaped during the administrative reform in TBNA, which had great impacts on its development and management.

### 7.2.3 The role of Yujiapu CBD in TBNA

TBNA made its first master plan after it was proposed as a municipal development strategy. In TBNA Master Plan (1999-2010), the spatial pattern of TBNA was still characterised by three separated urban districts (Table 7.1). Existing urban areas were the development focus at that time. There was no intention to develop a CBD in the TBNA Core Zone. When TBNA became a national development strategy, the status of TBNA was upgraded to the sub-centre of Tianjin, as discussed in chapter six. Correspondingly, the second TBNA Master Plan (2005-2020) proposed that the development of a CBD was needed to promote its urban functions. Initially the CBD was a loose area that comprised the business district of TEDA, Yujiapu and Tanggu downtown. The role of Yujiapu was not specially highlighted and the development scale was not as grand as current plan. This edition master plan was revised quickly because of administrative adjustment. The more recent TBNA Master Plan (2009-2020) attached more attention to the development of Yujiapu and adjusted the traditional spatial pattern of TBNA. City region theories have been applied to this TBNA Master Plan. Planners drew upon the planning of the Randstad, San Francisco Bay Area and Shanghai Pudong New Area and proposed that TBNA would develop into ‘a polycentric, multiply clustered and networked urban region’ as its long-term spatial development outcome (Huo, 2016). Among several separated urban areas within TBNA, TBNA Core Zone, which consists of the Tianjin port, TEDA, Yujiapu CBD and Tanggu old downtown, was proposed as a parallel city to Tianjin Central District. Yujiapu CBD was established as an independent functional zone with its own administrative committee and defined as the centre of TBNA Core Zone in this plan.

TBNA has adopted many new practices in urban planning. The planning system of TBNA was reformed along with the political system reform. A comprehensive planning system has been developed since the upscaling of TBNA (Huo, 2016). This new planning system requires both the master plan and the detailed plan of TBNA to cover the whole territory. In addition, functional zone authorities need to make their own master plans. Urban design of key development projects is required to be completed before construction with the aim of improving the function and image of TBNA. As a functional zone and flagship development project, the master plan, detailed plan and urban design of Yujiapu CBD need to be completed to a very high standard. The following sections will analyse these aspects in much more detail.

**Table 7.1 TBNA Master Plans and the role of the new CBD**

<b>Plans</b>	<b>Spatial proposal</b>	<b>Projected population</b>	<b>Positioning goals</b>	<b>Role of Yujiapu CBD</b>
TBNA Master Plan (1999-2010)	<ul style="list-style-type: none"> <li>• One core: Tanggu urban area</li> <li>• Three nodes: Hangu urban area, Dagang urban area and Hai River Downstream Industrial Park</li> </ul>	1.65 million	<ul style="list-style-type: none"> <li>• A modern industrial base</li> <li>• A logistic centre</li> <li>• An international port city</li> </ul>	N/A
TBNA Master Plan (2005-2020)	<ul style="list-style-type: none"> <li>• One axis: Hai River development corridor</li> <li>• One belt: Coastal development corridor.</li> <li>• Three urban districts: Tanggu, Hangu and Dagang;</li> <li>• Seven functional zones;</li> </ul>	3 million	<ul style="list-style-type: none"> <li>• Gateway of North China</li> <li>• An advanced manufacturing and R&amp;D transformation base</li> <li>• An international shipping and logistic centre</li> <li>• A liveable and ecological new city</li> </ul>	<ul style="list-style-type: none"> <li>• First proposal for a new CBD in TBNA</li> <li>• Yujiapu is part of the CBD</li> </ul>
TBNA Master plan (2009-2020)	<p>One city (TBNA Core Zone), twin ports and three areas (Liveable and tourism area in the North; Petrochemicals and ecological area in the South; Airport and advanced industrial area in the West)</p> <p>A polycentric, multiple clusters and networked Bay urban region</p>	6 million	<ul style="list-style-type: none"> <li>• Gateway of North China</li> <li>• An advanced manufacturing and R&amp;D transformation base</li> <li>• An international shipping and logistic centre</li> <li>• A liveable and ecological new city;</li> </ul>	<ul style="list-style-type: none"> <li>• Proposal for Yujiapu CBD</li> <li>• One independent functional zone</li> <li>• International finance and business district</li> </ul>
Yujiapu CBD Master Plan (2010-2020)	<ul style="list-style-type: none"> <li>• One river, two banks and six districts</li> <li>• Core area: Yujiapu Financial District and Xiangluowan Business District</li> </ul>	<ul style="list-style-type: none"> <li>• Population: 0.5 million</li> <li>• Employment: 0.6 million</li> </ul>	<ul style="list-style-type: none"> <li>• City centre of TBNA</li> <li>• China's financial innovation base</li> <li>• International finance and business district</li> </ul>	<ul style="list-style-type: none"> <li>• City centre of TBNA</li> <li>• Key part of TBNA Core Zone</li> </ul>

Source: Summarized by author based on Huo (2016)

## 7.3 The rationale and governance of Yujiapu CBD

In the context of entrepreneurial urban governance, mega urban projects, such as new city centres, new CBDs and development zones have been designated in most Chinese cities with the aims of improving the city competitiveness and to market the city as an attractive place to invest and live in (Qian, 2011). CBD projects have been favoured in major Chinese cities. Unlike the CBDs in the West, which are often self-generated albeit aided by public policies, Chinese CBDs, especially the new and second-order CBDs far from traditional city centres are often policy-led and state-led projects (Zacharias and Yang, 2016). City governments have sponsored the plans and financed the design and construction of infrastructure and modern buildings in these new central places for their own purposes (*ibid.*). The formation and development of Yujiapu CBD is not an exception.

Yujiapu CBD is the secondary CBD of Tianjin. The first CBD, Xiaobailou, located in the city centre was proposed in the 1990s. Compared to the Xiaobaolou CBD, Yujiapu CBD was entirely new and built from ground-up and was proposed in line with TBNA's upscaling. The construction of a new CBD in TBNA was regarded an important measure to facilitate the development and opening-up of TBNA in line with national aspirations. Therefore, Yujiapu CBD shows some particularities compared to other new CBDs in China. Although the Yujiapu CBD bears the hallmarks of city-sponsored initiatives, the central state is also a key player in its development process (Kim, 2014; Interview, G01BH; G13BH; A02). The production of Yujiapu CBD involves interests of multiple-level governments and key politicians from local government to national levels. In practice, its plan and governance are largely beyond Tianjin's purview. In this section, the process of decision making and political and technical rationality for the new CBD proposal will be discussed in detail.

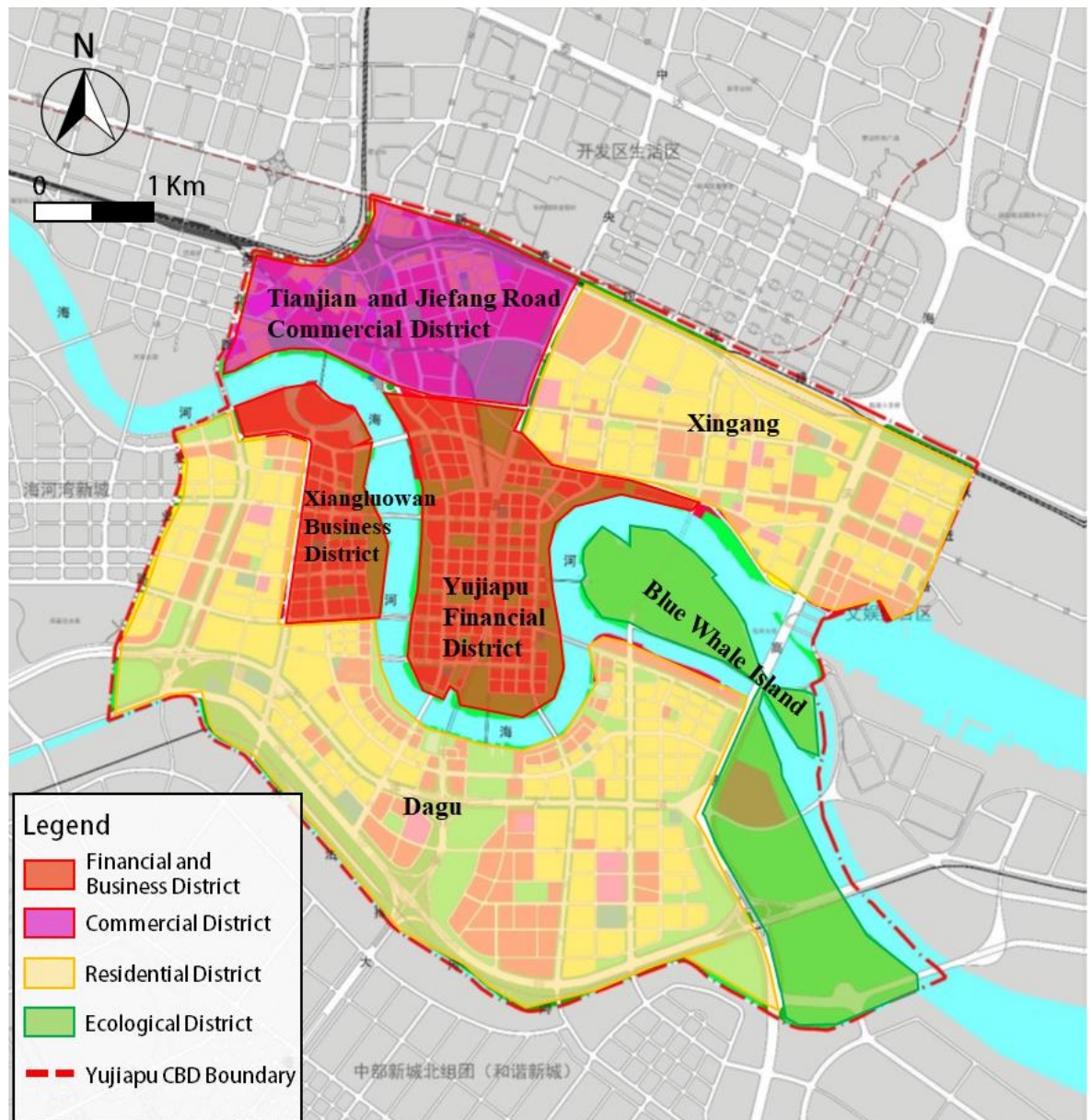
### 7.3.1 Decision making and the master plan of Yujiapu

The proposal for a new CBD in TBNA was under discussion and in preparation for several years. It was first proposed by Tianjin Municipal Government in 2005. Municipal government decided to develop a new CBD in TBNA, but neither the Tianjin Master Plan nor TBNA Master Plan clarified the preferred scheme for its development (Table 7.1). Due to the involvement of the central state, the new CBD received special attention from higher level governments and the proposal for the new CBD became more ambitious. The final



scheme was gradually formed which drew from the expertise of international professionals and considered the demands of governments. The revised master plan of the new CBD was approved in 2012.

Yujiapu was selected as the site for the new CBD. The spatial scope and functionality of the new CBD in TBNA were determined explicitly in this new plan. Tanggu downtown and TEDA were excluded from its spatial scope. Yujiapu CBD includes not only the financial and business districts as its core but also the residential and ecological areas surrounding it. Its overall spatial layout is summarized as ‘one river, two banks and six districts’ (*yihe liang'an liuqu*). Both sides of the Hai River are major development areas for the agglomeration of service sectors and modern office buildings. The planned CBD covers an area of 38 square kilometres to accommodate six sections, namely Yujiapu Financial District, Xiangluowan Business District, Tianjian and Jiefang Road Commercial District, Dagū Residential Area, Xingang Residential Area and Blue Whale Island (Figure 7.3). Later, the planned area was enlarged to 47 square kilometres which includes old residential area, serving to increase its population (Interview, G02BH). Yujiapu Financial District and Xiangluowan Business District lying on the oxbow of Hai River, are the core areas of CBD and the initial development area. The remaining districts such as Xingang and Dagū are mainly planned as residential areas.



**Figure 7.3 Overall layout of Yujiapu CBD in its master plan (2010-2020)**

Source: (TAUPD, 2017)

There were three positioning goals for Yujiapu CBD (Table 7.1). First, the CBD aims to become the city centre of Binhai New Area, responsible for administration, cultural activities, business and commercial activities. Second, it aims to function as a financial innovation base of China. New preferential and pilot policies regarding to finance and trade will be experimented in Yujiapu CBD. Third, the new CBD aims to become a world-class CBD in a short period. It is touted as China's 'New Manhattan' and 'Shanghai Lujiazui CBD' in North China. The CBD district is planned to provide 0.6 million jobs, which is more than its

projected population (Table 7.1). It is said that the planned office space in its core area is already more than one third of the total in Manhattan (Sanderson and Forsythe, 2012).

### 7.3.2 Rationality of the new CBD proposal

Yujiapu CBD was a top-down designated and newly planned centre based on the discussion above. The rationality for building this new CBD involves local entrepreneurial governments, intervention of the central state, planning professional and pragmatic considerations. It has become an important centre in both TBNA and Tianjin because it is expected to achieve several purposes simultaneous.

#### *To promote urban identity of TBNA*

After more than ten years' endeavour, TBNA became an economic growth pole of Tianjin. It contributed more than 40 percent of total GDP of Tianjin in the early 2000s (Figure 7.2). However, TBNA was still a heavily industrialised port region with secondary industry accounting for 72% of the total GDP of TBNA in 2005. The traditional industrial structure and weak public service provision did not match its new positioning as a national New Area and as a parallel city of Tianjin. Demands for better public services and producer services increased due to the rapid economic and population growth. Therefore, it was identified that there was a need to build a new central area within TBNA in a short period (Interview, G04BH). According to the local official, Yujiapu is a mega urban project in TBNA to enhance the urban identity of TBNA Core Zone. As she noted,

*'The traditional city centre in the Central District is formed in a long history and the best public facilities are agglomerated there. According to the development situation, there is still a huge gap between the Central District and TBNA Core Zone. The construction of the centre of TBNA Core Zone commenced just a few years ago. It was built in a new place according to new standards. You can see that the infrastructure and image of old Tanggu did not change a lot.'* (Interview, G04BH)

*'Ten Great Battles in TBNA include the development of new industrial districts and new urban areas. Yujiapu is one of the ten projects to develop a new urban area in TBNA.'* (Interview, G04BH)

As the positioning goal of Yujiapu CBD shows, it is designed to become the city centre of TBNA. Through building a new CBD in TBNA, producer service sector is intended to be agglomerated here and therefore the economic structure can be upgraded in TBNA. Moreover, the function of the Yujiapu CBD is planned much more diverse than other CBDs which typically emphasise business and retail functions. It provides a number of high-end shopping centres, culture amenities, theme parks and iconic buildings. In this way, the image of TBNA as a globalised modern city is intended to be enhanced and therefore the ‘twin cities’ spatial pattern of Tianjin can be achieved.

### *To create new development across the Hai River*

The decision to develop the new CBD in Yujiapu rather than in TEDA or Tanggu Downtown was based on several considerations. First, the governments and planners adopted a pragmatic approach. New development in an empty place will save on demolition costs and compensation fees and avoid expected resistance (Interview, P03, P04). The landscape in the old Tanggu downtown was considered unsuitable for a global financial centre and would involve large amount of relocation. In the Yujiapu area, only a few factories and residents needed to be relocated (Interview, P01). Second, Yujiapu is a waterfront area, which provides a possibility of combining its river morphology with modern urban design (Interview, G01BH; G04BH). A comprehensive and fancy scheme could be carried out in Yujiapu. Third, beyond the feasibility and urban design considerations, the other important aim of the Yujiapu CBD is to integrate the development of the north and south banks of Hai River (Huo, 2016). Before the plan, public facilities, residential communities and economic zones were mainly located in the north of Hai River. The south bank of Hai River was a lagging area because of the divide of Hai River and the concentration of heavy industries. To facilitate the balanced development within TBNA, the governments preferred to expand across the Hai River so that the new development on the south side can serve larger hinterland. In the spatial proposal of Yujiapu CBD, an important element is the so-called ‘two banks’. One part of the core area, Xiangluowan Business District is located on the south side of Hai River (Figure 7.3).

### *To improve competitiveness of TBNA*

The designation of Yujiapu reflects the central state and municipal state's ambitions to increase the importance of TBNA at a regional and global scale. As Kim (2014) argued in his comparison of new city development in Songdo, Yujiapu and Lingang, the creation of new CBD at Yujiapu reflects the endogenous competition between and within regions. In the Bohai Region, there lacks dominating cities beside Beijing. The competition between other important cities in Bohai Region such as Dalian, Tangshan, Tianjin, Qingdao is fierce because they all have ports and the industrial structure in these cities are homogenous (Interview, A03).

To enhance the economic status of TBNA as the 'third growth pole' of China, the central state approved to establish a financial centre and a free trade zone in TBNA. Special financial and trade related policies could be exclusively tried and applied to Yujiapu CBD. Tianjin Municipal Government and TBNA Government also supported the implementation of these special policies so that TBNA can stand out from homogeneous competition. The policy trial and the industrial adjustment could also facilitate the cooperation between the coastal cities in Bohai Region. Yujiapu CBD also provides a window for Bohai Region to participate in global economy and to catch up with PRD and YRD as well.

### *Central state's crisis management*

Political leaders at central state level played an important role in the decision-making and development process of TBNA and Yujiapu CBD. The formation and development of Yujiapu is influenced by the fourth-generation political leaders as well (Interview, A02; G01BH; G13BH). Compared to other planning projects, several projects in TBNA such as the Yujiapu CBD and the Sino-Singapore Tianjin Eco-city gained a great deal of support from the central state during Wen's tenure.

Yujiapu CBD is reputedly a political product of previous Premier Jiabao Wen (Interview, A02; G01BH; G13BH). On the one hand, Tianjin is the hometown of Premier Jiabao Wen so he tended to direct key projects to Tianjin (Interview, A02). Several members of Politburo, such as Gaoli Zhang, were promoted based on their performance as Tianjin's political leaders. Therefore, Tianjin has a close relationship with key leaders in the central state. On

the other hand, in 2008, the Global Financial Crisis also influenced the socio-economic stability of China. Premier Jiabao Wen launched the ‘Four Trillion RMB Stimulus Plan’ to cope with the financial crisis. Yujiapu CBD was one of the most important and large-scale projects requiring massive investment at that time. To ensure a successful implementation, President Jintao Hu and Premier Jiabao Wen visited TBNA and also specially visited Yujiapu CBD many times to inspect its development progress (Interview, G01BH).

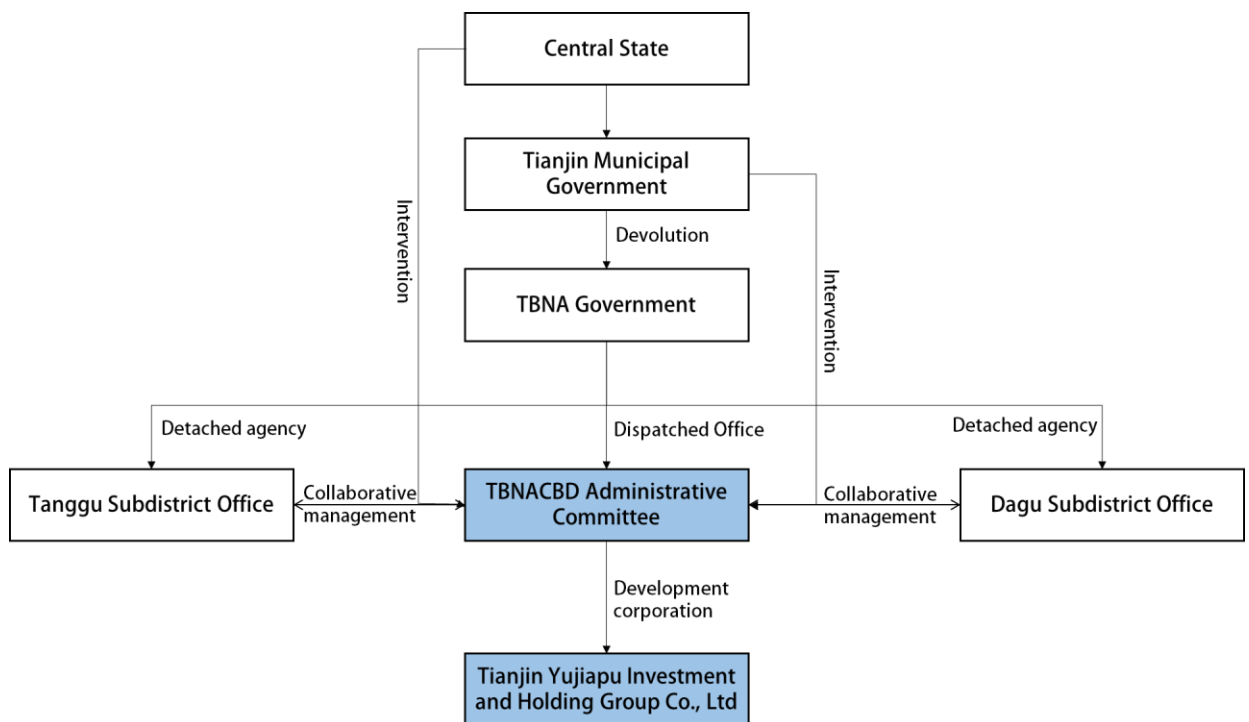
### 7.3.3 Governance of Yujiapu CBD

Due to its unique formation process, the governance mode of Yujiapu CBD was distinct from usual mega urban projects. Along with the administrative reform in TBNA, the governance mode of Yujiapu CBD is moving towards a variegated multi-level governance mode. The multi-level polity involves different tiers of governments such as the central state, Tianjin Municipal Government and TBNA Government, the dispatched office such as the administrative committee and non-government actors like development corporations (Figure 7.4). The shift to multi-level governance is related to two paradoxical processes of institutional reform that are power devolution and the direct intervention from higher level governments. Because of the upscaling to a national New Area, Tianjin Municipal Government was encouraged to devolve power of to TBNA to enhance its autonomy (Interview, P01). However, because of the setting of special pilot zones in Yujiapu, the central state and Tianjin Municipal Government both have authority to supervise and interfere with its development. The increasing communication between different actors involved in Yujiapu’s development has become an important feature of its governance mode. This becomes more evident during the process of financing and policy pilot process, which will be discussed in next section.

Because of several rounds of administrative reform, the complicated and fragmented relationships between TBNA and its components such as development zones and urban districts were gradually clarified. Following the foundation of TBNA Government, Yujiapu CBD was set up as one of functional zones and an administrative committee was established correspondingly in 2010. The CBD Administrative Committee is a ‘dispatched office’ (*paichu jigou*) of TBNA Government, which is mainly responsible for economic development affairs including plan-making, infrastructure construction and industrial projects arrangement in the planned area of Yujiapu (Interview, G02BH). Social affairs

within Yujiapu is in the charge of sub-districts, the ‘detached agencies’ (*paichu jiguan*) of TBNA Government (Interview, G02BH). Currently, Tanggu and Dagou Sub-district Offices collaboratively govern the Yujiapu CBD with Yujiapu Administrative Committee.

Yujiapu CBD Administrative Committee consists of several bureaus and offices corresponding to TBNA District government arrangement and they are responsible for routine work. However, approval power in terms of planning and development control is still retained by TBNA Government (TAUPD, 2017). Besides, administrative bureaus and offices within the Yujiapu CBD Administrative Committee, Tianjin Yujiapu Investment and Holding Group Co., Ltd (TJYIHGC) were affiliated to the committee as the primary development corporation undertaking the construction and investment of the new CBD. It is the key implementor on the behalf of administrative committee. This company has four subsidiary companies, which have similar functions as their parent company but are responsible for different districts and resources (TAUPD, 2017).



**Figure 7.4 A variegated multi-level governance of Yujiapu CBD**

Source: Produced by author

## 7.4 Approaches to developing a new centrality

### 7.4.1 State-led financing and financialising of new development

TBNA gained a great deal of financial support from the central state and Tianjin Municipal Government in its initial development. The financial support was given in a variety of ways such as tax refunds and special funds (XNARI, 2017). Since it succeeded in upscaling to a national strategy, the central state provided a special fund to TBNA since 2005, which provided initially one billion RMB per annum, reduced to 0.8 billion since 2014 (*ibid.*). This special fund has financed around 14 billion RMB in total by 2019, which is equivalent to £1.6 billion, according to the average exchange rate of 2019 (1 GBP=8.81 RMB).

This long-term special fund support from central state contributed only a small part of the investment. Being a centrally endorsed New Area, TBNA could also take advantage of credit guaranteed by government to draw more money from the financial markets by using different financial instruments (Figure 7.5). The major funding sources for developing Yujiapu CBD include bank loans, local government investment and construction bonds, and Local Government Financial Vehicles (LGFVs). China Development Bank (CDB), a policy bank affiliated to the central state played a crucial role in supporting the construction of TBNA (Sanderson & Forsythe, 2012). It issued a loan of 50 billion Yuan to TBNA in 2005 and consequently a new development corporation named Tianjin Binhai New Area Construction and Investment Group Co., Ltd (TBNACIGC) was newly created to manage CDB's loans, which also became the most important Local Government Financial Vehicle (LGFV) and developer in TBNA.

LGFVs are established by local governments or their departments and agencies to perform the function of financing government-invested projects. State-owned land acts as a collateral as well as a source of paying back their debt. They are usually major developer of land and projects under the control of local government and their agencies. Because of the 'Four Trillion RMB Economic Stimulus Plan' implemented after the 2008 Global Financial Crisis, the central state relaxed the constraint and regulations on creation of new financial tools and LGFVs by local government. This 'government led and market-oriented operation' financing mode has become popular in TBNA since 2008. For example, TBNA has launched 'Ten Great Battles' with a total investment of 1.5 trillion yuan between 2008 and 2012 (Huo,



2016). ‘Ten Great Battles’ refers to ten key projects located in different functional zones, each with its own LGFV (Interview, G04BH). Yujiapu CBD was listed as one of the key projects and an investment group corporation was established as the primary financing platform and developer.

Key infrastructure such as Yujiapu Transport Hub and Cultural Centres were financed by the development corporation of TBNA Government (Figure 7.5). In 2011, TBNACIGC also issued construction bonds to the value of 10 billion RMB via the financial market and 1 billion of this was used to fund the construction of Yujiapu Transport Hub (Sanderson & Forsythe, 2012).

Beyond the investments from central government, municipal government, local government and development corporations, other provincial governments and state-owned companies participated into the capital circle to achieve central state’s vision through funding the construction of skyscrapers. Xiangluowan Business District was planned to accommodate headquarters of companies from other regions and cities. Based on the previous negotiation, 48 buildings and 39 projects have been planned. According to a municipal government official,

*‘the buildings in Xiangluowan Business District were mainly occupied by central state-owned companies or institutes. In the initial development, the central state required each province to invest and build an office building and encourage them to relocate their representative offices or state-owned companies to Xiangluowan.’*  
(Interview, G08TJ)

In a nutshell, the Yujiapu CBD is an entirely state-financed project and multiple level governments have been involved in the financing and financialization process in the past decade. Through the employment of financial tools, it was claimed that the government has poured more than 200 billion RMB to Yujiapu CBD in total by 2014 (Lu, 2018).



#### 7.4.2 Policy incentives to attract new business and talents

In addition to the financial support from multi-level governments, Yujiapu CBD is also a pioneering place where pilot policies have been implemented. Not only has Yujiapu CBD enjoyed the preferential policies designed for TBNA, but also it has been incorporated into other important new national strategies recently. These policies aim to enhance its positioning as an international financial centre and to stimulate business growth through policy incentives.

When TBNA was confirmed as a national level New Area in 2006, central state approved TBNA as National Comprehensive Reform Pilot Area (NCRPA) and allowed it to try new initiatives to facilitate the reform and opening up of TBNA (State Council, 2006). The NCRPA involved the institutional reform in domains of finance, rural collective land use right, foreign trade and tax preferential policies. For example, high-tech enterprises established in TBNA could enjoy lower corporate income tax rate, reduced from 25 percent to 15 percent (State Council, 2006). The NCRPA policy also encouraged TBNA to carry out pilot policies in venture capital, offshore finance and foreign exchange management. Since the new CBD in TBNA was proposed, Yujiapu has become the most important platform for the implementation of new financial reform and innovation.

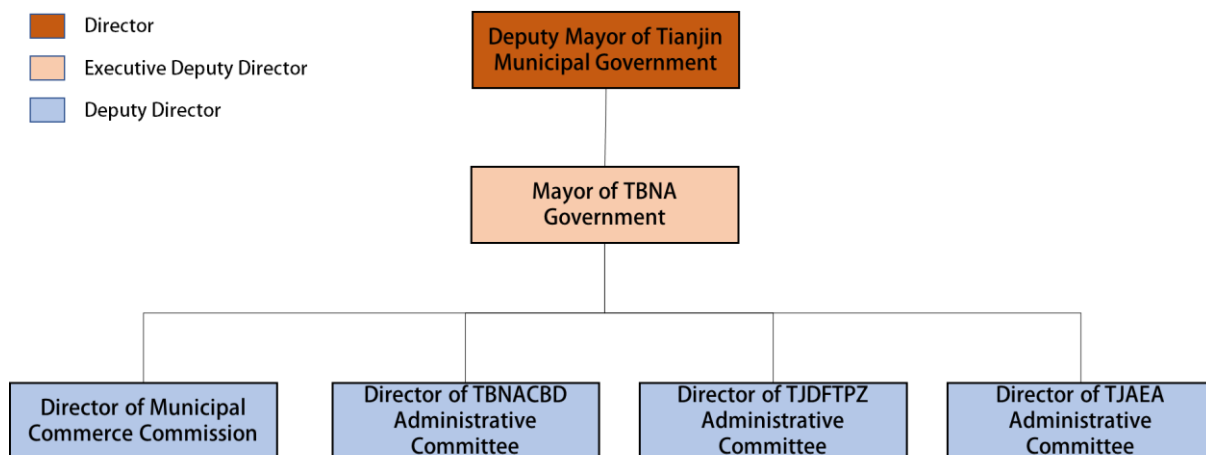
With rapid physical construction and completion of several key projects, Yujiapu CBD began to show a certain degree of speciality and privileges in the policy realm as well. It was incorporated into recent new national strategies, such as Coordinated Development of Beijing-Tianjin-Hebei, the Belt and Road Initiative and Pilot Free Trade Zone. In this context, many preferential policies have been designed to attract enterprises, research institutes and talents to Yujiapu CBD, aiming to consolidate its centrality and importance within TBNA as well as in the Beijing-Tianjin-Hebei Region. Because of its importance in the national policy, the policies for the new CBD are well customised and very attractive (Table 7.2). It is expected that many enterprises and talents will be attracted to this CBD and the commercial buildings will be fully occupied.

Among these policies, the new approval of Tianjin Pilot Free Trade Zone (TJPFTZ) and integration development of Beijing-Tianjin-Hebei Region have significant impacts on Yujiapu CBD in terms of its financial innovation and international trade. According to a

document *Beijing-Tianjin-Hebei Industrial Relocation Guide* launched by the Ministry of Industry and Information Technology in 2016 (MIIT, 2016), Yujiapu CBD has been identified as an important platform for the relocation of financial business, headquarters, international trade, and e-commerce enterprises from Beijing.

In December 2014, Tianjin Pilot Free Trade Zone (TJPFTZ) was approved by the central government. It is one of three Free Trade Zones approved following Shanghai Pilot Free Trade Zone in 2013. TJPFTZ was proposed based on previous Duty-free Zone in Tianjin port and the Airport Economic Area and extended to Yujiapu CBD. The whole zone covers a total area of 119.9 square kilometres and consists of the three districts now, namely the Yujiapu CBD, Dongjiang Port Zone and the Airport Economic Area. Compared with Duty-free Zones, TJPFTZ implements much more relaxed regulations on foreign enterprises management and financial innovation. For this reason, Yujiapu CBD was defined as the core area of TJPFTZ, which is responsible for foreign investment and trade related financial reform and innovation. Moreover, measures such as custom integration, lower transaction cost across different cities within the region are implemented in the TJPFTZ to facilitate integrated development of Beijing-Tianjin-Hebei Region (Table 7.2).

The designation of TJPFTZ leads to the increasingly mutual interaction between Yujiapu and other functional zones and between different tiers of governments. The central state devolved several foreign economic affairs management powers to Tianjin Municipal Government and encouraged it to further decentralise them to TJPFTZ. To coordinate the relationship between the central state, municipal government, TBNA Government and three component zones, a new TJPFTZ Administrative Committee were founded (Figure 7.6). Yujiapu CBD and other two functional zones are under the control of their own Administrative Committees. The directors of these three Administrative Committees have seats in the TJPFTZ Administrative Committee board. TJPFTZ Administrative Committee is led by Deputy Mayor of Tianjin Municipal Government. The Mayor of TBNA Government and Director of Municipal Commerce Commission are executive deputy director. The coordination could be achieved through the communication within the administration board, which consists of related leaders at different levels and from different departments and functional zones.



**Figure 7.6 Tianjin Pilot Free Trade Zone Administrative Committee**

Source: Produced by author based on TJPFTZ official website (<http://china-tjftz.gov.cn>). Note: TJDFTPZ: Tianjin Dongjiang Free Trade Port Zone; TJAEA: Tianjin Airport Economic Area

**Table 7.2 Preferential policies in Yujiapu CBD**

<b>Policy</b>	<b>Domain</b>	<b>Aim</b>	<b>Items</b>
Twenty Initiatives on Promoting Commercial Development in Binhai New Area Central Business District	Commerce	To improve the utility rate of commercial buildings; To enhance the urban vitality of CBD	<b>For enterprises registered, operated or paying tax in Yujiapu Financial District and Xiangluowan Business District:</b> <ul style="list-style-type: none"> <li>✓ Subsidy for enterprises</li> <li>✓ Subsidy for tenants</li> <li>✓ Subsidy for employees</li> </ul> <b>For talents working in Yujiapu Financial District and Xiangluowan Business District:</b> <ul style="list-style-type: none"> <li>✓ Talent premium</li> <li>✓ Housing subsidy</li> <li>✓ Household (Hukou) registration preferential policy</li> </ul>
Opinions on Promoting Development of Film, TV and Cultural Industry in Binhai New Area Central Business District	Film, television Cultural industry	To attract relocated film and cultural industries from Beijing; To facilitate the development of film and cultural industry in the CBD	<b>Fiscal support:</b> <ul style="list-style-type: none"> <li>✓ Subsidy for enterprises and institutes</li> <li>✓ Talents premium</li> <li>✓ Subsidy for individual income tax</li> </ul> <b>Special fund (200 million yuan):</b> <ul style="list-style-type: none"> <li>✓ Subsidy for service platform projects</li> <li>✓ Low interest loans</li> <li>✓ Premiums to enterprise or institutes for IPO or prize-winner</li> <li>✓ Housing and events subsidy</li> </ul> <b>Talents policy:</b> <ul style="list-style-type: none"> <li>✓ Talent premium</li> <li>✓ Household (Hukou) registration preferential policy</li> </ul> <b>Industrial Guide Fund</b> <b>Customised policies and services</b>

**Table 7.2 (Continued)**

<b>Policy</b>	<b>Domain</b>	<b>Aim</b>	<b>Items</b>
Twenty-Two Initiatives on Promoting Technological Innovation and Development in Binhai New Area Central Business District	Innovation and entrepreneurship	To promote the development of innovate industry; To improve the regional innovation capacity	<b>For all kinds of scientific and technological innovation platform, enterprises and service institutes:</b> <ul style="list-style-type: none"> <li>✓ Fiscal subsidy</li> <li>✓ One-time grants</li> <li>✓ Office subsidy</li> <li>✓ Patent reward</li> <li>✓ Subsidy for entrepreneurs' individual income tax</li> </ul> <b>Industrial Guide Fund</b> <b>Customised policies and services</b>
Regulation on China (Tianjin) Pilot Free Trade Zone	Financial innovation; International trade	To support the establishment of China (Tianjin) Free Trade Zone	<b>Investment and opening up:</b> <ul style="list-style-type: none"> <li>✓ Reduce or remove restrictions on investment for certain industries</li> <li>✓ Adopt 'Negative List' management for foreign investment</li> <li>✓ Encourage overseas investment</li> <li>✓ Encourage innovation and entrepreneurship</li> </ul> <b>International trade:</b> <ul style="list-style-type: none"> <li>✓ Implement the international trade 'single window' service</li> <li>✓ Encourage cross border e-commerce</li> <li>✓ Improve the custom declaration efficiency</li> <li>✓ Financial innovation</li> <li>✓ Cross-border use of RMB</li> <li>✓ Foreign exchange administration</li> <li>✓ Leasing business</li> </ul> <b>Integration of Beijing-Tianjin-Hebei Region:</b> <ul style="list-style-type: none"> <li>✓ Customs integration</li> <li>✓ The registered enterprises can expand the exhibition and trade in the region</li> <li>✓ Special funds</li> <li>✓ Lower the financial transaction cost across different administrative area</li> </ul>

Source: Summarized by author based on TBNA Government Official Website available at <http://www.tjbh.gov.cn/.htm>

### 7.4.3 Place marketing through ambitious urban planning and design

Modern and ambitious urban planning and design have been employed as an important government technique for place marketing and for building public consensus for new city image through spatial and social restructuring in Yujiapu. The prevailing paradigm of the development of mega-urban projects in China, especially newly developed zones such as CBDs, has become a tactic for localities to increase city competitiveness and to market the city as an attractive place to invest and live in (Qian, 2011). Yujiapu CBD is an image project proposed to improve the attractiveness and competitiveness of TBNA. Because of local entrepreneurial states and the involvement of central state and other interest groups, the planning and design of Yujiapu CBD have been completed to a much higher standard and on a larger scale. Ranging from master plan, urban landscape design, transport design to design of individual skyscrapers, the role of urban design was stressed throughout the development process.

In the early preparation and decision-making process, the central state and local state's aspirations can be reflected by the rationale for site selection. The selected location of the new CBD was originally mainly undeveloped area, occupied by old factories, dockland, warehouses, villages and derelict land. It provided enough space for planners and designers to draw a grand blueprint. Geographical proximity to the Hai River was also one of main factors in forming the choice of site, resembling the location of London Docklands and New York City, with a river bounding three sides. Waterfront space has enabled the planners, urban designers and architects to produce great design to improve the vitality of the new CBD. Canary Wharf in London Docklands and Manhattan Financial Centres in New York City were employed as paradigm models for Yujiapu CBD. For example, the development themes and design principles of Yujiapu are essentially an imitation of Canary Wharf, where Skidmore Owings and Merrill (SOM) employed similar development themes and strategies (Interview, G02BH). Yujiapu was also promoted as the 'New Manhattan' in China. The grand designs and unique geographical features give supremacy to Yujiapu within TBNA.



To promote a high level of planning and design, renowned international and domestic institutes and professionals were invited to participate in the planning and design process. Tianjin Municipal Government and TBNA Government adopted a variety of forms such as international workshops, consulting meetings, and international competitions to help improve the modernity of Yujiapu CBD (Huo, 2016). The planning and design work in Yujiapu CBD were organised in an innovative way to guarantee that the whole process has continuity and the final schemes could be feasible to be implemented. Urban design has become part of public policy of Yujiapu CBD. Tianjin Municipal Government and TBNA Government and their planning departments formed the Operating Committee to make final decision about key projects. Professionals in planning, architecture, transport fields consisted of Expert Committee, who provide review and consulting services in the whole process. Concrete design projects were assigned to international design institutes and companies according to their expertise. The American design firm Skidmore Owings and Merrill (SOM) was entrusted to design the Yujiapu Financial District; the transportation planning was assigned to MVA of Hong Kong; the landscape design along the Hai River was commissioned from EDAW design company; the Japanese architectural firm Nikken Sekkei led the underground space design and Hargreaves Associates, who designed the landscape of the London Olympic Park, was in charge of landscape design. Local planning and design institutes including Tianjin Academy of Urban Planning and Design and Tianjin Bohai Urban Planning and Design Institutes also participated to provide their local knowledge and technical support.

In addition, TBNA government also held an international design competition for Yujiapu Financial District worldwide with the help of the International Union of Architects (UIA). The competition called for proposals for Yujiapu Financial District from 93 countries. The competition ended with an award ceremony and international forum, which invited Gaetan Siew (president of UIA), Peter Hall (president of British Town and Country Planning Association), professors from domestic universities, delegates from Canary Wharf, La Défense and planning and design firms to discuss and introduce their experiences in building a new CBD (TBUPDI, 2008). The international design competitions, award ceremonies and

forums held by government will be covered by media, which offers opportunities for place marketing to national and global audience.

The participation of overseas planning and design firms, academics and professionals brought in their experience, technology and expertise. Tailored global themes of sustainability and intelligence mode of imaging urban space were articulated into planning discourse of Yujiapu. Based on the idea of the winning competition proposals, SOM made the conceptual plan for Yujiapu Financial District in 2008. The design of Yujiapu adopted classic ideas of new urbanism, characterised by ‘narrow streets, a dense road network and open space’ (Interview, G02BH). New urbanism was associated with ‘transit-oriented design’ and therefore Yujiapu transport hub was arranged within the initial area of Yujiapu Financial District. Mixed land use including commercial, leisure, hotel, exhibition activities was also stressed in the design process. These design themes aim to improve the vitality of human activities and provide a pedestrian-oriented living environment. The plan also implements a green development strategy, which emphasizes the ecologically conscious and technologically advanced urbanism (Kim, 2014). Yujiapu was the first place to be selected for ‘Low Carbon Model City’ by Asia-Pacific Economic Cooperation as it adopted advanced green building technologies and world-leading transit system (*ibid.*). Other famous architects for individual skyscraper design also cooperated with SOM to carefully orchestrate the skyline and outlook of buildings (Figure 7.7). They compiled Urban Design Guideline for Yujiapu and then it was implemented as a regulatory control just like the Detailed Plan in Yujiapu (Huo, 2016). The grand and high standard plans and designs help to promote Yujiapu as a global city, a green city, and a place for better living and working.



**Figure 7.7 Landscape design of Yujiapu CBD**

Source: (Huo, 2016: 413)

#### 7.4.4 Public bodies as new entrants

To promote the supremacy status of Yujiapu CBD within TBNA, functions such as administration and public services have also been consolidated through intragovernmental negotiation and arrangement. Public sectors which are usually under control of the state or funded by the state are much easier to negotiate with than private enterprises (Interview, G01BH; G04BH; G12TJ; G13BH). It has transpired that government agencies and public funded projects were main space users in the CBD after Yujiapu CBD was put into use.

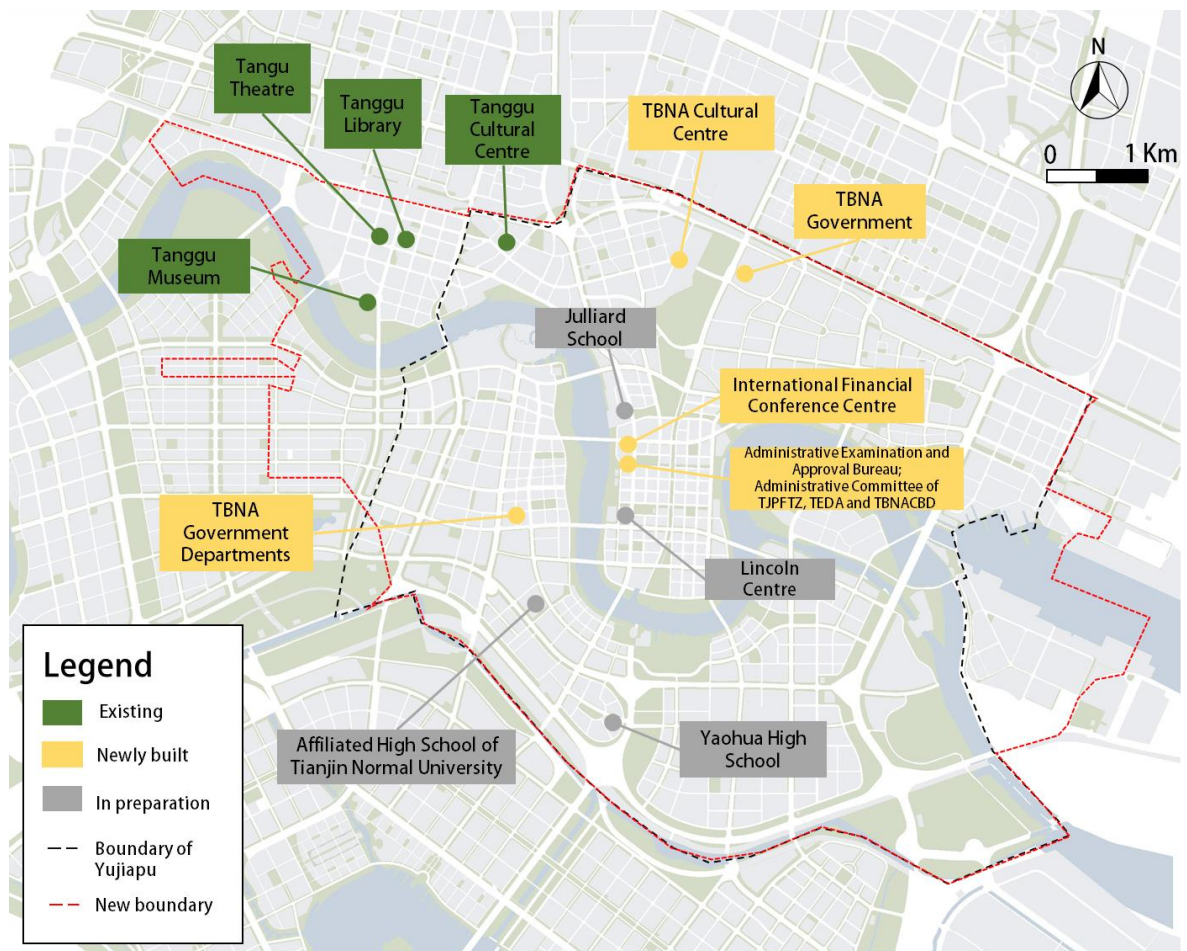
The majority of departments and affiliated agencies of TBNA Government have moved into the Yujiapu CBD (Figure 7.8). The district government itself has moved to the new government office building located within Yujiapu CBD. The newly designated TBNA Administration Examination and Approval Bureau and TJPFTZ Administrative Committee have been relocated to Yujiapu Financial District. Several departments of district government such as Statistical Bureau, Development and Reform Commission, Commerce Commission, Planning and Land Resource Bureau were relocated to Xiangluowan Business District. TBNA Government rented space in Guotai Mansion as the offices of government departments and was also the main tenant of this office building (Interview, G06BH).

The relocation of government is an effective way to facilitate the development of new CBD. On one hand, it enhanced the CBD's administrative function and improved the occupancy rate of the office buildings. Meanwhile, the incoming civil servants as well as the new business trips to these government departments improved the vitality and stimulated local consumption. On the other hand, the new government arrangement enhanced the image of the CBD, was intended to raise private investors' confidence.

Yujiapu CBD was also planned to provide high quality and self-contained services to TBNA through the construction of several key cultural and public facilities. A large urban cultural complex was designed and built in the CBD, supported by public funding. The new Binhai New Area Cultural Centre, which consists of an art gallery, a library, a science and technology museum, a performance centre, a civic centre and a cultural gallery, has become a landmark. This mega project was constructed on industrial land previously occupied by Tianjin Soda Plant, adjacent to the new district government office building. The Cultural Centre improves the civic identity and image of Yujiapu CBD as well as the whole TBNA. In addition, Yujiapu International Financial Conference Centre has been completed for holding conference and events. Yujiapu Lincoln Centre, and the Tianjin Juilliard School, all funded by the CBD's affiliated development corporations, will start building in the Yujiapu Financial District soon. These international cooperation projects are intended to make the CBD feel more globalised, fashionable and modern.

Public facilities like hospitals and schools are often insufficient and of poor quality in a newly constructed area in China. However, through the efforts of government, the new branches of Affiliated High School of Tianjin Normal University and Yaohua High School, will be built in Dagu Residential District (Interview, G06BH).

In combination with existing public resources, the new CBD is expected to be developed into the administrative centre, cultural centre and public service centre of Binhai New Area. The introduction of government agencies and construction of public amenities have improved the soft environment and boosted the investors' confidence to a certain extent.



**Figure 7.8 Distribution of public sectors in Yujiapu CBD**

Source: Produced by author based on interviews, google maps and the consultancy report from TAUPD (2017).



## 7.5 The socio-spatial outcome of Yujiapu CBD

However, the urban reality in Yujiapu CBD does not conform with government aspirations and expectation. To assess the progress of this project, the produced space in Yujiapu need to be explored critically. TBNA Core Zone is well recognised as an important urban centre of Tianjin, but there is no conclusive answer that where should be its centre within this area (Interview, P01). TEDA was a leading development zone in China and was proposed in the early phase of reform policy. It also planned and built a Modern Service District (MSD) to provide financial and producer service. Tanggu downtown is a traditional urban settlement where most residents and migrants still live. Yujiapu CBD is supposed to be the flagship project in line with the multi-level state's ambitions. Although Yujiapu CBD was quite often mentioned as critical place by interviewees regarding polycentric development of Tianjin, they show their concerned rather than confidence with Yujiapu CBD's future (Interview, G01BH; G02BH; G03TJ; G13BH; G16TJ; A02; P03). From their perception, Yujiapu CBD has not yet become a real central area for TBNA, Tianjin and even larger region.

Yujiapu shows that building a new CBD at such a large scale in only few years is a difficult mission. State bodies at different scales have made great efforts to forge Yujiapu CBD to become a national and (sub)-regional centre. The state-controlled production has led to dramatic spatial changes in Yujiapu, which also indicates the challenges it was facing.

### 7.5.1 'New Manhattan' with a fake prosperity

The built environment of Yujiapu CBD has changed dramatically. The first phase of construction in Yujiapu CBD has been completed and these new buildings began to be put into use gradually. Key infrastructure projects such as Yujiapu Transport Hub, Culture Centres have finished construction and opened. When I first entered the CBD through the underground transport hub, concentrated skyscrapers heaved into sight. Physically, it looks like the 'New Manhattan' in China though a few projects are still under construction (Figure 7.9). So far, the initial area in Yujiapu Financial District and the whole area of Xiangluowan Business District have been basically built-up, while other districts are still in the planning

stage. The land parcels in other undeveloped area were protected by dust protection nets or lawns.

Yujiapu has the largest agglomeration of office buildings in Tianjin. It is supposed to be occupied by headquarters of domestic and foreign large-scale companies. However, when doing site viewing in these two districts, most office buildings were closed and only few were in use. It can be easily identified that economic vitality is relatively low in Yujiapu CBD.



**Figure 7.9 A glance at Yujiapu CBD**

Source: Photographed by author

Nevertheless, the development of CBD is promising, at least according to the official statistical data (TBNASB, 2017; TAUPD, 2017). The GDP of Yujiapu CBD soared after it started substantial construction. The GDP of the new CBD increased dramatically, from only

0.55 billion in 2011 to 27.28 billion in 2016. Its contribution to the total GDP of Binhai New Area increased to almost 3%, while this figure was close to zero in 2011.

The prosperity of Yujiapu CBD may be related to the physical completion of the mega projects in this designed centre. Initially, large amount of fixed asset investment facilitated the growth of GDP. After the completion of the first phase construction, the economic growth mainly came from tertiary sector. But in fact, there exists a significant gap between statistical data and actual situation. The main reason for the rapid growth is policy incentives rather than economic rationality. After the CBD was established as a part of TJPFTZ and Innovation and Entrepreneurship Zone (IEZ) by the central state, the quantity of registered enterprises in Yujiapu increased dramatically. Many enterprises would like to register at Yujiapu CBD to enjoy preferential policies (Interview, G01BH; G02BH; P01). In 2016, more than 500 enterprises were newly established in Yujiapu (TAUPD, 2017). A large proportion of investments were made by domestic enterprises rather than foreign direct investment. Moreover, almost all of registered companies in Yujiapu CBD are private and small businesses (TAUPD, 2017). Many business incubators have also been established as the response to the IEZ policy, which provides platforms for new and start-up company registration. However, their real offices are in the Central District or elsewhere rather than in CBD. One planner in TBNA branch mentioned that he often took shared cars to TBNA and met many people who went to TBNA government departments to handle business affairs because their companies are registered there (Interview, P01). Stimulated by the policy incentives, finance, cultural and creative industry and science and technology appear to have become the pillar industries of Yujiapu CBD. By 2016, the CBD had around 900 financial and 700 high-tech enterprises (TAUPD, 2017).

However, the economic statistics showed that the sense of prosperity was entirely artificial. The development of CBD depends on the rent-seeking behaviours of agencies. It is not a long-term solution. Recently, TBNA government has adjusted its tallies downwards and the total GDP of TBNA was reduced by one third.



*'One of the main reasons for the adjustment of GDP in TBNA is because the statistics exclude the enterprises that registered but not operated in the CBD. That's why the GDP of Tianjin still increased regardless of the decrease in TBNA.'* (Interview, P01)

### 7.5.2 Internal and external fragmented space

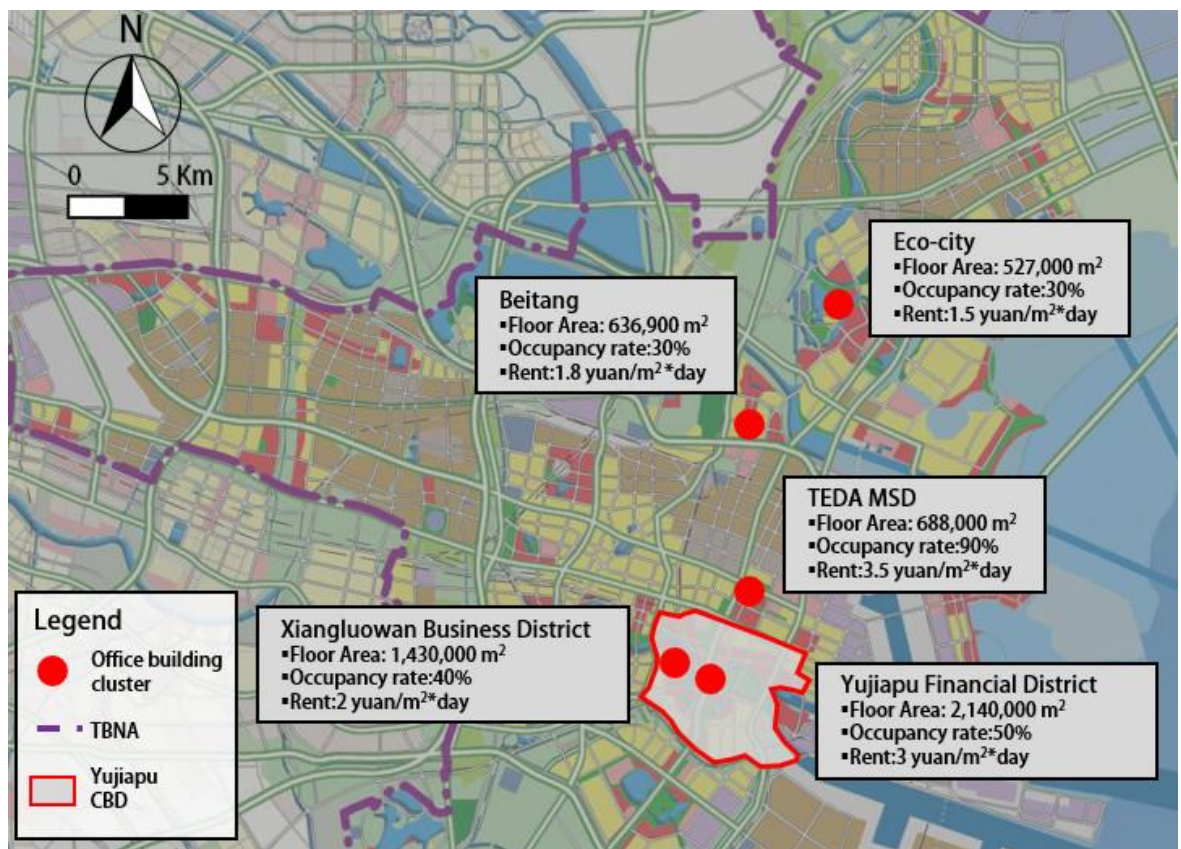
TBNA was treated as an urban-region and the polycentric principle was also applied to TBNA by local planners as well (Interview, P01). Polycentric development may lead to fragmentation if not well organised (Jenks and Kozak, 2013). Yujiapu CBD as a planned centre of TBNA showed significant internal and external fragmentation administratively and physically, which prevented its long-term development.

Administrative fragmentation has led to excessive competition between functional zones, which are each responsible for planning, development, and investments on their own. The coordination was mainly achieved through coordination of TBNA Government, which is relatively inefficient (Interview, G13BH). Competition in terms of new investment, talent attraction and the housing market between Yujiapu and other functional zones is still fierce. One interviewee mentioned an interesting phenomenon.

*'The high indebtedness forced functional zones in TBNA to be enthusiastic about real estate development. Even in places not suitable for buildings like the Dongjiang port, they still build and sell housing anyway. We often make jokes that we'd better buy the first or second floor because it will become the ground floor a few years due to the settlement of land.'* (Interview, G01BH)

Administrative fragmentation also resulted in the industrial development among different functional zones becoming homogenous. Yujiapu CBD is only one of several functional zones to develop financial and business services. Although the finance and business functions were planned to be agglomerated in Yujiapu CBD, other functional zones have their own plans to build a CBD as well (Figure 7.10). To satisfy the demands of industrial companies within the development zone, TEDA built up the MSD providing 688 thousand

square metres of floor area. The Sino-Singapore Eco-city project was initially a public housing community in nature (Chang *et al.*, 2016), but it was difficult to attract residents because of lack of industry and employment (Interview, G03TJ). Therefore, it proposed to develop a green CBD to attract animation industry. In the Beitang Economic Area, the Tianjin Binhai-Zhongguancun Science Park, a project to facilitate the integration of Beijing and Tianjin, was settled down there, which also provides massive office space. Overall, oversupply of office space in TBNA makes Yujiapu CBD just another ordinary business district. It is difficult for it to compete with TEDA MSD, which has had 20 years of development history and strong industrial base, let alone for it to compete with Xiaobaolou CBD in Central District of Tianjin, or CBDs in Beijing at a larger scale.



**Figure 7.10 Office space in TBNA**

Source: (TAUPD, 2017)

Physically, Yujiapu CBD is segmented into separate parts and isolated by Hai River, railways and elevated roads (Interview, G13BH; P01). The intentional design of distribution two business districts within the CBD on opposite banks of Hai River increased the barrier for physical connection. The most frequent destination within the CBD was Xiangluowan Business District as many government departments have been relocated there, but the transit hub was in Yujiapu Financial District. These two districts are connected by Hai River Moveable Bridge (Figure 7.11). Although the average traffic flow is not huge in Yujiapu CBD, the single transport channel still causes traffic jams in the rush hour or when the bridge needs to open (Interview, G02BH).

The accessibility between CBD and other functional zones of TBNA is poor regardless by public or private transport because of space fragmentation. For instance, the Eco-city is designed as a large-scale residential community and Yujiapu CBD is planned to be a financial and business centre. If the commuting time between them is acceptable, both projects can develop better (Interview, P01). However, it takes around 50 minutes from the Eco-city to Yujiapu CBD for only 20 kilometres distance by private cars, while it takes similar time from Central District to Yujiapu CBD which is about 50 kilometres. Thus, few functional relations have been formed between them.



**Figure 7.11 Hai River Moveable Bridge between Xiangluowan and Yujiapu**

Source: Photographed by author. Note: The electronic sign says that the open time of the bridge would be adjusted.

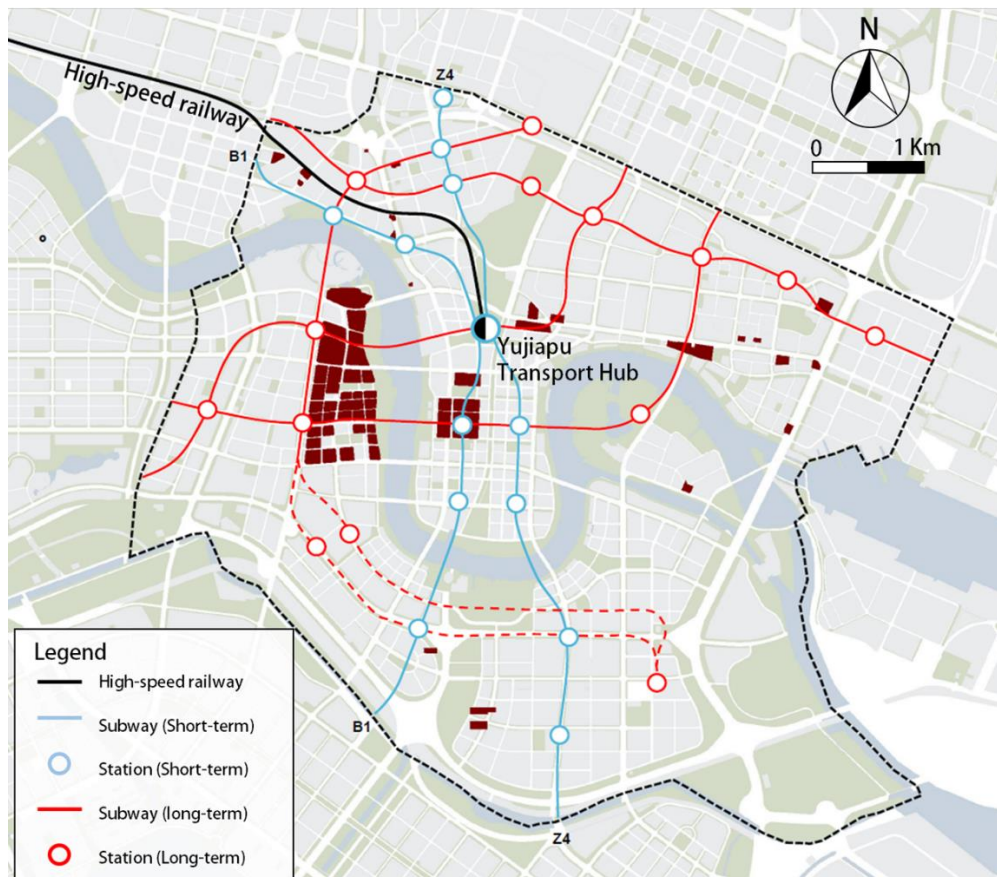
Although Yujiapu CBD is connected with Beijing and Tianjin Central District by High-speed Railway, there are complaints about the train schedule and flexibility (Interview, G01BH). As the iconic project of Yujiapu Financial District, Yujiapu Transport Hub was completed in 2015 and the high-speed railway between Beijing and Tianjin was further extended to Binhai New Area. It takes less than one hour from Beijing South Station to Yujiapu and less than 30 minutes from Tianjin Station to Yujiapu. It is the most efficient way to travel between these places, but it is also one of the very few public transport options. A local government official explained that,

*'Like the twin cities about 60 km far away from each other in Tianjin, subways and light rails should be the main modes of public transport to enhance the functional*



*connections between them. Tianjin should learn from Tokyo Metropolitan Area, the transport of which are more efficient and flexible and has longer operation time....But because the Yujiapu Transport Hub is underground, the cost of extension new lines is very high. In addition, there may be not enough space to extend.'* (Interview, G01BH)

It is planned that other public transport such as subways will connect Yujiapu with Tanggu old downtown, TEDA and other functional zones to mitigate the fragmentation (Figure 7.12). However, majority of these projects are still in the preparation stage and cannot be achieved in a short-term. Yujiapu Transport Hub is the only rail transport station in the CBD and the busiest place in the CBD. Passengers need to take taxis to get to their destinations in the CBD to save time and energy after they arrive Yujiapu Transport Hub.



**Figure 7.12 Public Transport Accessibility in Yujiapu CBD**

Source: (TAUPD, 2017)

### 7.5.3 Identity of a ‘ghost city’

‘Ghost city’ or ‘empty city’ are the most famous identities for Yujiapu CBD from both my interviewees’ perception and media publicity (e.g. The New York Times, 2019). Yujiapu CBD has been built-up with many modern buildings and skyscrapers in a short time. Such a large-scale advanced construction has attracted negative media coverage and critiques from academics, albeit sometimes exaggerated. The publicity enhances the ghost city identity of Yujiapu CBD. Almost all interviewees recognised that Yujiapu CBD was not the real centre of TBNA and regarded it as a failed government image engineering project. Thanks to government support, the population and employment in the CBD increased indeed, especially in the public sectors. The government officials’ salary in TBNA is much higher than jobs at the same administrative level in other districts due to the government subsidy (Interview, A01). Nevertheless, few staff live or shop in the CBD. They prefer to live in the Central District where they can access to better services and living conditions (Interview, A01; G04BH; G13BH). In the daytime, many people commute to the CBD for work or business affairs, which increases the vitality to a certain degree. In the night, it becomes an entire ghost city without people and light. It is said that Yujiapu has become the best place in Tianjin for roller blading because it provides good public space with little traffic and few people (Interview, A03).

Several high-end shopping malls have newly opened recently but only few people visit them. Global Go is one of the important underground commercial clusters, which is directly linked to the underground transport hub (Figure 7.13). You can only see the shop staffs or some passengers passing through it in the business hours (Interview, A02). There is a broad screen exhibiting a film about the history and achievement of Yujiapu in the corridor between Global Go and Yujiapu Transport Hub, but the sluggish scene in the shopping mall is an ironic contrast to this ‘miracle’.



**Figure 7.13 Global Go Underground Shopping Mall**

Source: Photographed by author

Beyond lack of urban vitality, the utility facilities actually cannot support the operation of large-scale building complex. One interviewee who is responsible for infrastructure construction said that,

*‘We found big problems in terms of the utility facilities in CBD. The CBD is full of modern skyscrapers and buildings. If the office buildings of Xiangluowan Business District and Yujiapu Financial District were fully occupied and used, the CBD will be paralysed because current water, electricity and heat supply system and transport cannot afford that yet.’ (Interview, G13BH)*

## 7.6 A disappearing CBD

The development of Yujiapu CBD is now being challenged by new ideologies regarding Chinese urban planning and urbanisation. Unlike Lujiazui CBD in Shanghai Pudong New Area, which was also criticised and questioned in its early development phase but finally developed into a flourishing CBD, the failure of Yujiapu CBD is becoming inevitable. It seems that this ambition plan is being abandoned by the central state because of political and ideologies changes. This section discusses three new changes that reflect the weakening of the importance of Yujiapu CBD, which are namely the adjustment of governance and function, and the shift of central state's attention.

### 7.6.1 Incorporation into TEDA

To solve the development conflicts and problems, TBNA Government implemented three rounds of administrative reform and integrated nine functional zones into seven in 2013 and further to five in 2018 (Table 7.3). It has been decided to incorporate CBD into TEDA (Interview, G02BH; G04BH; G13BH). It is claimed that further integration of functional zones will improve the coordination between TEDA MSD and Yujiapu CBD, which will benefit for the development of TBNA because TEDA has developed much better than Yujiapu, and TEDA can sustain a more sustainable and stable growth. As one government official argued,

*'Although the growth of TEDA has been reduced but it still has many enterprises and its tax income has surplus. For Yujiapu, its large debts can be internalised into TEDA, a functional zone with better repayment capability. The tax surplus of TEDA can be used to repay the debts of Yujiapu CBD.'* (Interview, G13BH)

The TEDA Administrative Committee already has moved some departments into the office building of CBD administrative committee (Interview, G02BH; G04BH). The leadership and personnel of TEDA were also adjusted because of the incorporation. The annexation also means that Yujiapu CBD is gradually disappearing in policy rhetoric. Yujiapu CBD's



official website has been shut down and on the TEDA's official website, information about Yujiapu is also quite limited. The Yujiapu Transport Hub was also renamed as Binhai Station in 2019 in a silent way without getting too much public attention.

**Table 7.3 Administrative adjustments of functional zones in TBNA**

2010	2013	2018
Advanced Manufacturing Area	TEDA	TEDA
Nangang Industrial Area		
Binhai New Area CBD	Binhai New Area CBD	
Binhai Hi-tech Industrial Development Area	Binhai Hi-tech Industrial Development Area	Binhai Hi-tech Industrial Development Area
Lingang Industrial Area	Lingang Industrial Area	Tianjin Port Free Trade Zone
Airport Economic Area	Tianjin Port Free Trade Zone	
Sino-Singapore Tianjin Eco-city	Sino-Singapore Tianjin Eco-city	Sino-Singapore Tianjin Eco-city
Binhai Tourist Area		
Tianjin Port Logistics Area	Dongjiang Free Trade Port Zone	Dongjiang Free Trade Port Zone

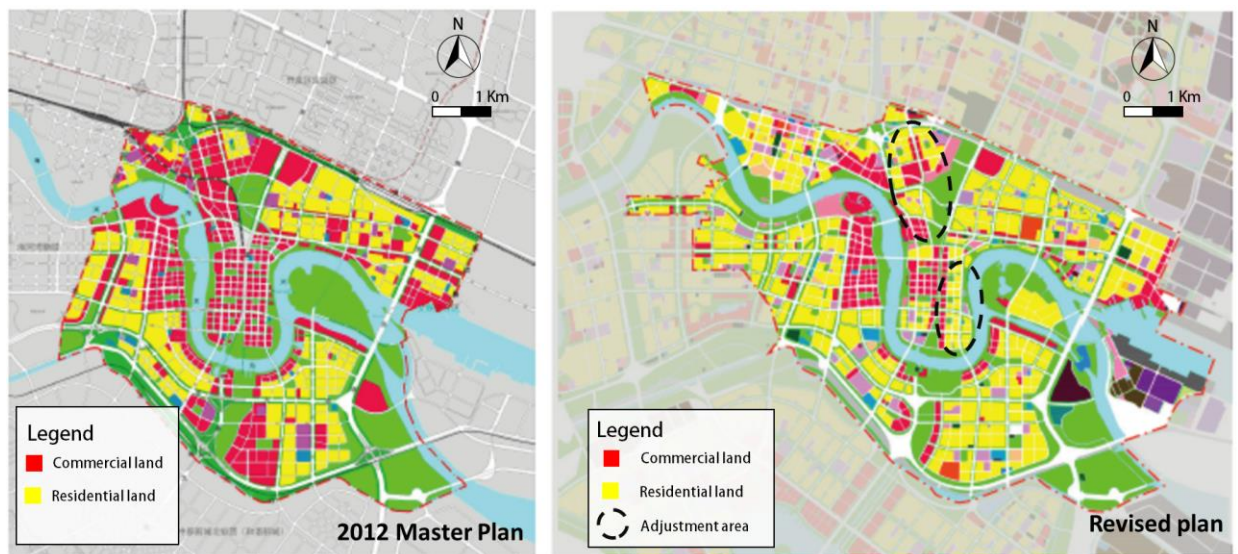
Source: Summarized by author

### 7.6.2 Positioning adjustment

Corresponding to the administrative adjustment, the positioning of Yujiapu CBD has been adjusted. At the regional scale, the newly launched national plan 'Coordinated Development of Beijing-Tianjin-Hebei' has defined Beijing as the core of the region (State Council, 2016). As discussed in chapter six, Tianjin has abandoned the aspiration of becoming the economic centre of North China. Yujiapu CBD in TBNA adjusted its positioning accordingly. The ambition to become an international financial centre has been debased to a demonstration zone for financial innovation.

The financial and business functions of Yujiapu will be weakened in future because of low occupation rate of completed buildings and the existing large amount of vacant land within

the CBD. Since 2014, Yujiapu CBD had already only leased residential land surrounding Yujiapu Financial District and Xiangluowan Business District (TAUPD, 2017). After incorporated into TEDA, the undeveloped business and commercial land in the core area of the CBD has also been adjusted into residential land in the revised detailed plan (Interview, P02; G02BH) (Figure 7.14). Yujiapu CBD can now provide new and modern estates near the completed modern landscapes to attract new residents and immigrants. The influx of population will activate the vitality and utility rate of business and commercial buildings and the residential land leasing income can also be used to repay the huge debts of the last decade. Essentially, the plan for a CBD has been aborted when its financial and business functions were curbed.



**Figure 7.14 Land use adjustment in Yujiapu CBD**

Source: (TAUPD, 2017)

### 7.6.3 Challenge from Xiong'an New Area

Yujiapu has received great support from multi-level governments in the last decade. However, its privileges are being eroded recently. Since 2010, the central state has approved New Areas intensively. Similarly, the FTZ policy has also been expanded to inland regions

very soon after Tianjin Pilot Free Trade Zone was approved. One planner worried about Yujiapu as well as TBNA's future. He said that:

*'The opportunity window of preferential policies in TBNA has been shortened as they were copied and implemented in other places as well. If the 'policy dividend' has disappeared, the development of Yujiapu CBD will become more difficult.'* (Interview, P01)

The establishment of Xiong'an New Area in the south of Beijing in Hebei Province is replacing TBNA to become the new development focus in the Beijing-Tianjin-Hebei Region, which exacerbates the failure of Yujiapu CBD. The contradiction and discontinuity of central state's policy between the new generation of leaders and their predecessors also contributed to led to the failure of Yujiapu (Interview, G13BH). The central state has shifted its attention from TBNA to Xiong'an New Area, which was newly established by top-down designation in 2017 to set up a model for new style of urbanisation in China. Xiong'an is indeed the third New Area proposed by the central state directly. Shenzhen Special Economic Zone and Shanghai Pudong New Area were established by top-down designation to pilot test new policies in the initial stage of China's reform programme. Other 16 New Areas are essentially the products of municipal or provincial government and approved by the central state. Xiong'an New Area is now regarded as the most important New Area after Shenzhen Special Economic Zone and Shanghai Pudong New Area. As mentioned above, a similar slogan was used to TBNA in 2006, but it must give way to Xiong'an New Area now for political reasons. Not only the central state, but also municipal governments within the Beijing-Tianjin-Hebei Region are required to support the development of Xiong'an New Area. Tianjin Municipal Government and TBNA Government also showed their positive attitude to support Xiong'an New Area (Interview, A02; G09TJ; G16TJ). The proposal for Xiong'an is detrimental to the development of Yujiapu. As one interviewee noted:

*'Many new projects that are supposed to be relocated to Tianjin have been attracted to Xiong'an New Area. Our Mayor also said Tianjin would give full support to the development of Xiong'an New Area no matter what resources it wants. So, in this*

*phase, Tianjin is negatively affected by the 'siphon effect' of Xiong'an New Area.'*  
(Interview, G09TJ)

Yujiapu CBD is therefore facing new competition in terms of preferential policies and investment. It should exploit the advantage of proximity to port and play a complementary role in port-related financial and business function for Xiong'an New Area.

## 7.7 Conclusion and discussion

This chapter answers why and how Yujiapu CBD has been proposed and developed as the centre of TBNA by investigating the political process, planning rationalities and spatial materialization process. Yujiapu CBD was proposed in the context that TBNA was experiencing rapid growth and dramatic socio-economic transition. TBNA was upscaled to a national New Area and been converted from an economic zone to a sub-provincial administrative district when this new plan was proposed. Yujiapu CBD was entirely newly established as an independent functional zone of TBNA, which was identified as the centre of TBNA Core Zone. Reflecting on the context and rationale for this new proposal, Yujiapu CBD is a state-led mega project that is a result of a combination of multi-level governments' efforts for multiple purposes. It is a political product to a large extent that is related to local entrepreneurial governments and direct intervention of the central state which aims to provide comprehensive and high-end services to TBNA, create new development across the Hai River, improve competitiveness of TBNA and act as a response to crises management.

To forge the new centre in TBNA, different approaches have been adopted by the central state, Tianjin Municipal Government and Tianjin Binhai New Area Government based on their own power, resources and capacities. Preferential policies, large amounts of financial support, financialization instruments, a high standard of planning and design, and manipulation of public sectors were useful tools to build up and reshape the built environment, function and image of Yujiapu CBD. Multi-level governance was a significant feature when applying these instruments and the central state played a key role in this process.

However, this chapter demonstrates that the Yujiapu CBD failed to develop into a genuine CBD and is now disappearing within TBNA's future development strategy manifested by its spatial outcomes and recent new changes. The built environment of Yujiapu has been improved significantly and its core area looks like 'New Manhattan' physically with the completion of building complex and transport hub in the initial development phase. It produced a fake, temporary prosperity by inventing new special policies. However, in fact, the economic and urban vitality of Yujiapu is weak although many small and private business registered at Yujiapu due to the policy incentives. The internal and external space of Yujiapu CBD were fragmented because of the administrative fragmentation and physical barriers. Fragmented governance in TBNA has dispersed the investment to several different development nodes and impaired the agglomeration economy (Interview, G01BH). Oversupply of homogeneous space in the coastal area, a lack of industrial base and physical barriers between the new CBD and its hinterland led to the failure of this grand plan. The government has realised that it is far easier to manipulate the public sectors than the private sectors. Recently, the political and cultural function of Yujiapu CBD has been strengthened because the relocation of district government and construction of cultural facilities. This new attempt has brought a certain vitality to Yujiapu, but it is still not enough make it a real centre. The modern urbanism and urbanity did not persuade that this was a 'place for work' or 'place for living'. On the contrary, the discrepancy between the grand physical space and people's perception of it enhances its identity of a ghost city and a failed government image-building project.

Because of political reasons, the Yujiapu CBD has been withdrawn in a stealthy way. It has been integrated into TEDA and its function has been adjusted from financial and business services to residential. Optimistically speaking, the modern skyscrapers, green technological facilities, fantastic landscape in waterfront space and the transport hub have already been there. With the improving function of administration and public services, it can be become a popular living space and an important part of TBNA Core Zone. After incorporated into TEDA, the conflicts and competitions can be internalised and the new function of Yujiapu CBD became more feasible to achieve. However, the opportunity cost of this grand project

is huge. Due to the waste of resources, it certainly hindered the development of Tianjin Binhai New Area.

The case of Yujiapu also reveals that the formation of a new CBD needs a long development process and support based on market rationality and historical accumulation, even in authoritarian China (Interview, P05; A02; G02BH; G08TJ). In the absence of market factors to drive it, state investment and policy incentives proved to be futile. The identity of being a new centre needs to be based on everyday experience and close physical and functional relations. The planning and flagship design cannot form the identity of a new centre.

## **Chapter 8 The emergence of centres in-between: the retrofit of Dongli and Wuqing in the polycentric development of Tianjin**

### **8.1 Introduction**

This chapter transfers research focus to the emerging new centres beyond the historical city centre and TBNA Core Zone in the polycentric system of Tianjin. Based on discussion in chapter six, Tianjin has shown a significant chained polycentricity structure in both its planning vision and actual development along its major development corridor. Due to the rapid urban expansion and complicated social and economic relations, the traditional suburban and peripheral locations of Tianjin have become the new focuses of development very recently. Several different types of centres have emerged in the suburban and exurban districts of Tianjin along the development corridor, which draw together with other urban centres into a revised new polycentric configuration for Tianjin. Moreover, these centres are often recognised as the most promising emerging centres by many informants in the fieldwork because of their political importance and their development conditions.

This chapter aims to investigate how and why these new centres in intermediate places have become important in the context of polycentric development of Tianjin, and what kinds of new governance arrangements and planning practices have been deployed in their development process for a better delivery of polycentric strategy and what spatial changes have been resulted in. Instead of choosing specific centres as cases, this chapter selects Dongli and Wuqing as embedded cases for the following considerations. First, these new rising centres are coincidentally located within the territories of two urban districts of Tianjin, Dongli and Wuqing. Secondly, it is the district government that oversees local planning and development affairs and therefore they provide a general political and space economies background for the policy making and spatial practices regarding the implementation of polycentric spatial vision. Finally, unlike the Yujiapu CBD case in chapter seven, some of these centres are still at a preliminary stage or have no substantial development. There are

no explicit and stable governance bodies, no official statistical data or documents that could be accessed to implement fine-scale analysis. Interviews with district government officials allowed me to get enough materials about the dynamics of these centres. In addition, these two districts also show some commonalities and differences in terms of their histories, geographical features and governance arrangements, which have resulted in different spatial logics and outcomes. By investigating these two case districts together, the big picture of the role of suburban and exurban districts in Tianjin's polycentric development can be figured out.

Drawing upon planning documents, interviews and field survey, this chapter first introduces the context of Dongli and Wuqing and compares their characteristics in terms of location, histories and administrative and governance frameworks. Then this chapter reviews their planning and development trajectories and attaches greater attention to their spatial transformation in the last decade. An outline of these urban centres as conceived space in each district will be given based on that. After that, this chapter analyses the spatial logic and the governance modes that have been adopted in the new development nodes. More explicitly, the impacts of inter-government relationships and of the planning profession on the urban space in these centres will be emphasized. Finally, this chapter compares the similarity and differences between two cases in terms of their spatial development mode and origin. The discussion will help to understand the complexity and heterogeneity of polycentric development in Tianjin and reveal opportunities and challenges for the future of in-between places.

## 8.2 Location, history and governance framework of Dongli and Wuqing

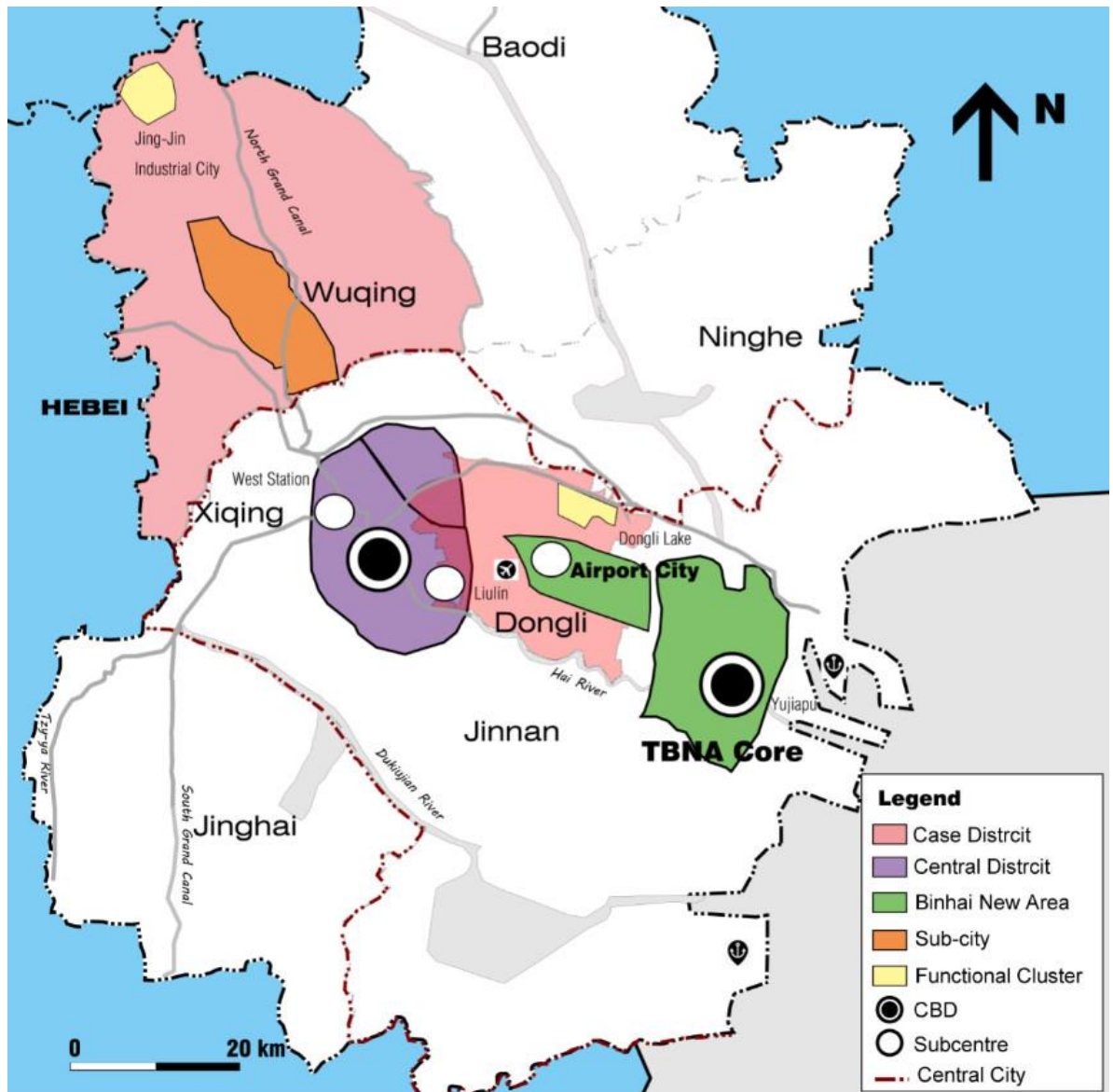
In this section, the general geographic situation, histories and governance frameworks of Dongli and Wuqing will be introduced to set a context for the following analysis. Historical development, geographic conditions and distinct power relations have great impacts on the formation of local development strategy and policy practices. The features of Dongli and Wuqing will be bundled together and be contrasted to stress the similarities and differences between them.



### 8.2.1 The geography of Dongli and Wuqing

In terms of geographic location, both districts are located along Tianjin's major development corridor from the northwest to the southeast along Hai River (Figure 8.1). They are both closely tied to major regional centres within and outside Tianjin physically and functionally. Dongli is one of the four suburban districts located between the so-called 'twin cities' of Tianjin, the Central District and TBNA Core Zone. Wuqing District is adjacent to Beijing Tongzhou District, Langfang in Hebei Province and Tianjin Beichen District. At a coarse scale, Wuqing is located between the central area of Beijing and Tianjin, two dominant urban centres in Beijing-Tianjin-Hebei Region. The centre of Wuqing District is 40 km away from Tianjin city centre, around 70 km from the central area of Tongzhou District, and around 90 km to Beijing city centre.

Although these two districts have similar location between well-developed urban centres, there also exist differences in their geographic characteristics. First, Dongli District is a near suburb while Wuqing District is an outer suburb or exurban area. Second, the major centres they are tied to have different levels of political and economic power. Beijing is the capital city of China as well as the dominant city in the Beijing-Tianjin-Hebei Region. TBNA is a sub-provincial level urban district and a new rising urban centre within Tianjin's jurisdiction. Third, the area of Wuqing District is 1570 km<sup>2</sup> about three times larger than Dongli District. That means Wuqing has more available space for new development.



**Figure 8.1 Location and major centres of Dongli and Wuqing**

Source: Produced by author, based on the draft 2016 Master Plan

### 8.2.2 The history and urban process of Dongli and Wuqing

In history, rural settlements have been established in the area of Dongli, but they were under the jurisdiction of other counties. Until 1953, Dongli has been built up as a designated suburban district called East Suburb (*dong jiaoqu*), indicating its location and development status. The designated suburban district was soon abolished because of the establishment of

People's Commune in 1958 and then recovered in 1962. Since then, Dongli District had become a stable administrative district which was directly governed by Tianjin Municipal Government and was renamed to Dongli in 1992.

Because of its closeness to the Central District (Figure 8.1), it was the primary destination for decentralisation of industries and population. In the pre-reform period, the first-generation 'Satellite Towns' were planned and built up in the suburb of Tianjin. Junliangcheng Satellite Town was one of industrial towns planned to be built in the East Suburb, but it did not develop very well due to lack of public facilities and transport connection. With further expansion of central city and improvement in infrastructure, the urbanisation and industrialisation process in Dongli began to accelerate. In 1992, Tianjin Municipal Government set up a development zone in Dongli along the Beijing-Tianjin-Tangshan Highway. Dongli Development Zone became an important industrial district between Central District and Tianjin Binhai New Area and was upgraded to national-level Economic and Technological Development Zone in 2014. Since the 2000s, Dongli District has become the focus of new development of Tianjin because of its locational advantage. Several mega development projects such as the Airport Economic Zone, the TBNA Hi-Tech Development Zone, the TEDA Western Zone, Huaming Model Town and Liulin Subcentre, which have been newly planned and developed, can all be found within the territory of Dongli District.

Wuqing is one of the oldest counties in North China. It was established in Western Han Dynasty (BC 202 to AD 9) and called Quanzhou and Yongyang historically. The name was changed to Wuqing in Tang dynasty (AD 742) and retained until now. However, its administration has continuously changed, and its jurisdiction has become much smaller since the foundation of PRC. After 1973, Wuqing County was resubordinated from Hebei to Tianjin Municipality and led by Tianjin Municipal Government. This governance mode was a pioneer of 'city leading counties' mode, as Tianjin is a municipality under the direct control of the central state, and it covers very a large area. In 2000, Wuqing was converted to an urban district from a county. 'Abolishing county and establishing city administrating district' is a common strategy for large cities to facilitate the decentralisation or urban industries and

urban rural integration (Ma, 2005). Wuqing was the first county in Tianjin to be subjected to this rescaling strategy so as to be better integrated with metropolitan and regional development.

As a traditional county, Wuqing was dominated by agriculture related activities and its population was mainly rural during its long history. Since the China's open door policy, it has experienced rapid economic growth and it has evolved to an urbanised economy, with development concentrated on the county town, Yangcun. In 1991, Tianjin Municipal Government also set up a development zone in the west-north of Yangcun town, which was upgraded into a national-level Economic and Technological Development Zone in 2010. Wuqing Development Zone has developed very fast and has become the economic engine in Wuqing. Besides Wuqing Development Zone, several other development zones such as Jing-Jin Technology Valley, Jingjin E-commerce Industrial Park, Tianjin Wuqing Automobile Industrial Park, Jingbin Industrial Park have been planned and constructed since 2000s. These development zones were the extension of important towns for industrial development in Wuqing.

Due to the development of economic enclaves, the economic structure and the urban form of Dongli and Wuqing has been restructured since the 2000s. These two districts were in transition from marginal areas to hotspots for new development. According to the official statistical data between 1995-2015 (Table 8.1), both districts have experienced astonishing growth and urbanisation, and differences in nuance can also be identified.

In terms of economic development, Dongli and Wuqing have both made a great contribution to the economic growth of Tianjin. As shown in Table 8.1, the GDP in Wuqing and Dongli District increased at a much faster rate than Tianjin in the past decade. Wuqing's GDP accounted for 6.21 percent of the total GDP in 2015, while this figure was only 3.1 in 2005. Dongli showed a similar trend, its proportion of Tianjin's GDP increased from 2.76 percent in 2005 to 5.29 percent in 2015. Economic growth in both districts was manifested in both the industrial and the service sectors while the primary sector declined. Agricultural activities have almost disappeared in Dongli, to only 0.48% in 2015.

In terms of urbanisation, Dongli and Wuqing showed a steady increase in both the permanent and registered population during the last two decades. The permanent population grew much faster than the registered population in both districts. That means these two places have become popular places for migrants. By 2015, the permanent population in Dongli was 0.75 million, twice the registered population and the figure for Wuqing was 1.18 million. Compared to Wuqing, a large proportion of population in Dongli come from other districts within Tianjin or other cities. The proportion of non-agricultural population can be used as an indicator to reflect the urbanisation level. In this respect, Dongli has shown dramatic growth since 2010 and the proportion of non-agricultural population had reached 69.23 by 2015. More gradual growth can be seen in Wuqing, with the proportion of non-agricultural population reaching 26.25% in 2015.

**Table 8.1 Main socio-economic indicators for Wuqing and Dongli**

Area	Year	1995	2000	2005	2010	2015
Dongli	GDP (billion)	2.66	6.4	10.22	54.01	87.50
	Percentage of Tianjin (%)	2.89	3.90	2.76	5.86	5.29
	Industrial Structure (%)					
	<i>Agriculture sector</i>	7.13	3.89	2.65	0.67	0.48
	<i>Industry sector</i>	48.18	45.36	51.73	65.79	52.82
	<i>Tertiary Industry</i>	44.69	50.77	44.62	33.54	46.7
	Permanent Population (10,000)				57.08	75.37
	Registration Population (10,000)	29.71	30.41	31.82	35.1	36.72
	<i>Non-agricultural Population (10,000)</i>	9.2	10.76	12	14.85	25.42
	Non-agricultural Population (%)	30.97	35.38	37.90	42.31	69.23
Wuqing	GDP (billion)	5.01	8.12	11.45	24.11	102.68
	Percentage of Tianjin (%)	5.44	4.95	3.10	3.70	6.21
	Industrial Structure (%)					
	<i>Agriculture sector</i>	22.58	18.53	18.90	8.52	3.88
	<i>Industry sector</i>	49.51	47.10	43.11	55.25	54.82
	<i>Tertiary Industry</i>	27.91	34.36	37.99	36.23	41.30
	Permanent Population (10,000)				94.99	118.11
	Registration Population (10,000)	79.05	79.87	81.72	84.7	90.08
	<i>Non-agricultural Population (10,000)</i>	8.13	9.95	12.48	15.73	23.65
Tianjin	Non-agricultural Population (%)	10.28	12.46	15.27	18.57	26.25
	GDP (billion)	92.01	163.94	369.76	922.45	1653.82
	Industrial Structure (%)					
	<i>Agriculture sector</i>	6.87	4.49	3.04	1.58	1.26
	<i>Industry sector</i>	54.47	50.03	55.47	52.47	46.58
	<i>Tertiary Industry</i>	49.11	45.48	41.49	45.95	52.15
	Permanent Population (10,000)	941.83	1001.14	1043	1299.29	1546.95
	Registration Population (10,000)	894.67	912	939.31	984.85	1026.9
	<i>Non-agricultural Population (10,000)</i>	507.94	532.51	562.4	604.42	656.6
	Non-agricultural Population (%)	56.77	58.39	59.87	61.37	63.94

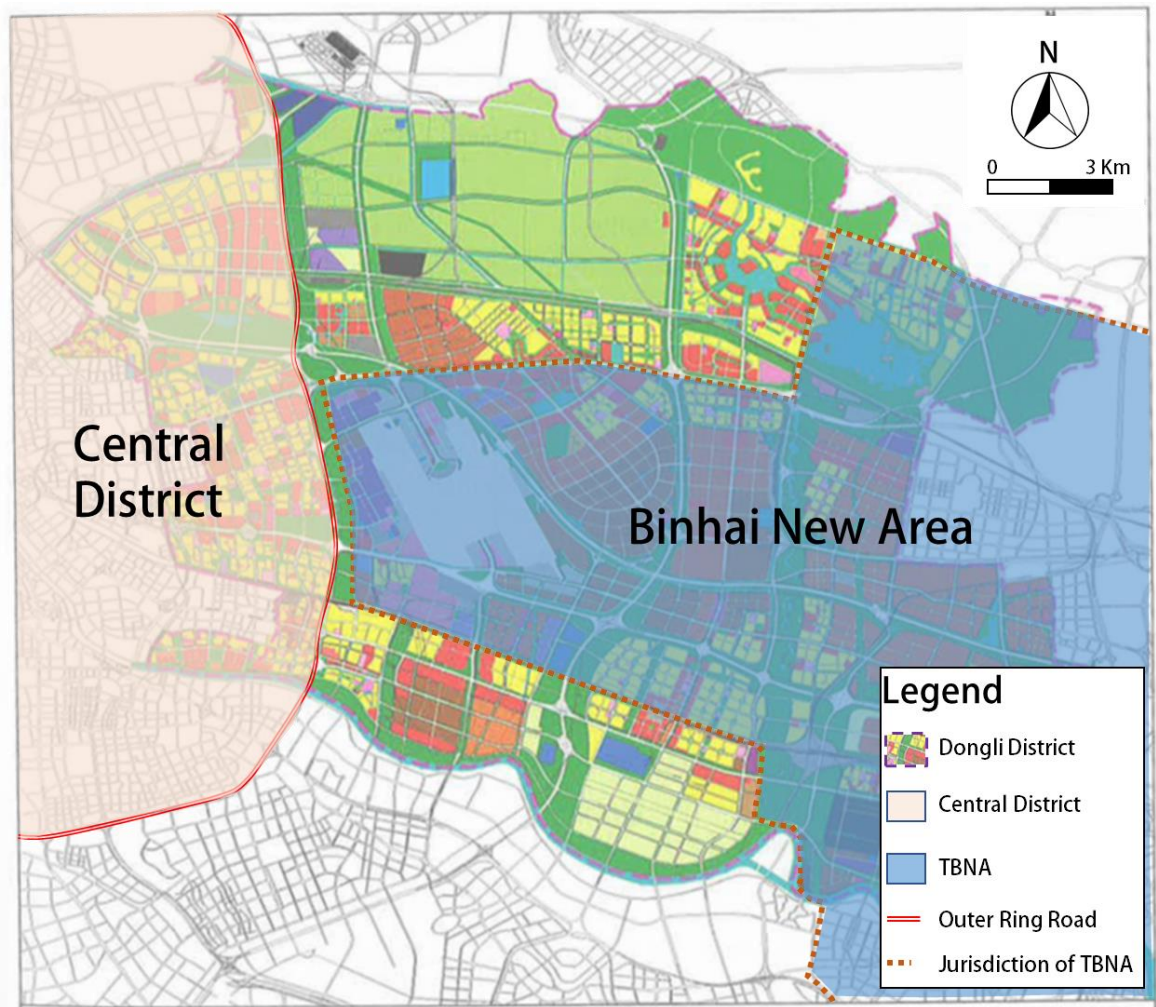
Source: TJSB, Tianjin Statistical Yearbooks, various years

### 8.2.3 Governance framework of Dongli and Wuqing

Currently, both Dongli and Wuqing are two urban districts of Tianjin. They are at the same level in the Chinese hierarchical administrative system. However, the power and governance modalities of their local governments vary significantly due to their differences in location and history mentioned above.

The location adjacent to two major urban agglomerations of Tianjin generates significant influences on Dongli's administration. The jurisdictional area of Dongli District is only 477 km<sup>2</sup> but is fragmented to three parts governed by Tianjin Municipal Government, TBNA Government and Dongli District Government respectively (Figure 8.2). After the completion of extension of the Outer Ring Road in the Northern Area of Central District, around 69 km<sup>2</sup> area within the Outer Ring Road is under the direct supervision of Tianjin Municipal Government. In addition, in order to support the development of Binhai New Area, the Airport Economic Zone (225 km<sup>2</sup>) was allocated to TBNA as well. Over half of the jurisdiction of Dongli was outside the control of Dongli District Government. So, the governance in Dongli District is fragmented because of the interventions of Tianjin Municipal Government and TBNA Government. The detailed responsibilities and management are as follows:

- TBNA part: 225 km<sup>2</sup> is included in Tianjin Binhai New Area as an economic functional zone. The planning and development are in the charge of TBNA District Government. TBNA Government negotiates with Dongli District Government about the benefit and tax sharing in this area (Interview, G28DL);
- Central District part: about 69 km<sup>2</sup> is located within Central District. The planning and development of this area are mainly controlled by Tianjin Municipal Government directly;
- Dongli District part: Dongli District Government is responsible for the social affairs in its whole jurisdiction and the economic function of remaining area.



**Figure 8.2 Fragmented governance in Dongli District**

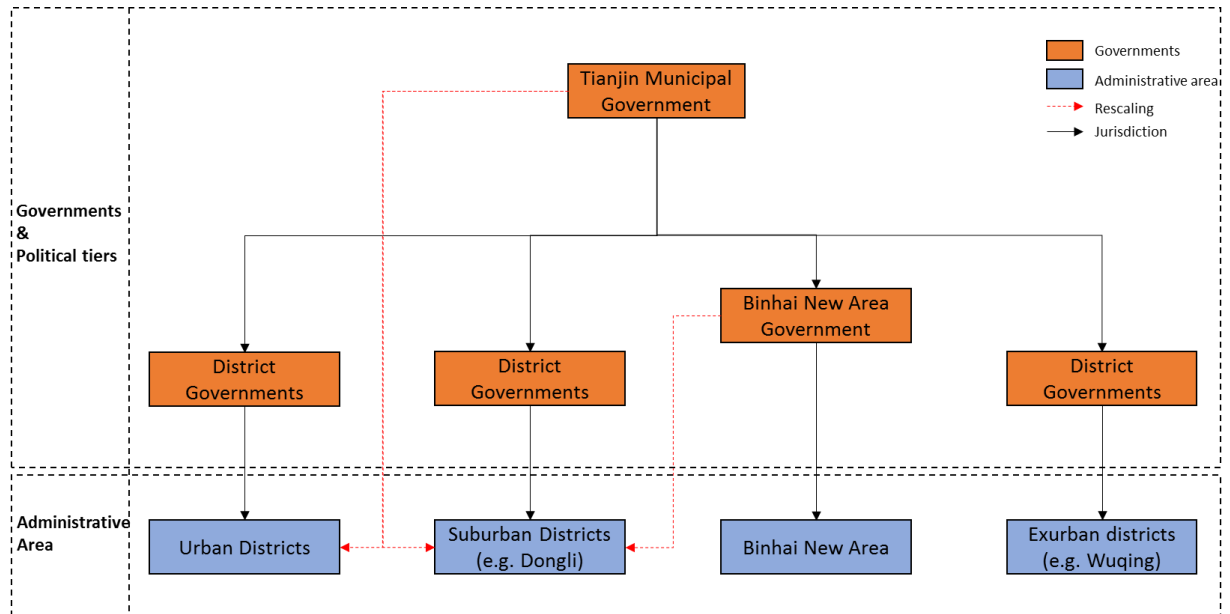
Source: Adapted by author based on map from TJLRCC and TJPB (2015)

In contrast, the jurisdiction of Wuqing is integrated and well-defined. Wuqing District Government has more effective control and management on its local development. It is because Wuqing was a historical county, a relative autonomous authority compared to urban districts. The administrative adjustment from a county to a district has accelerated the transformation of Wuqing from a rural economy to an urbanised economy. This state-led reterritorialization in China is usually a gradual process and yet incomplete (Luo *et al.*, 2010). Although counties lose a certain degree of administrative autonomy, Wuqing as a new exurban district converted from counties still retains a greater independent economic and political status compared to suburban districts like Dongli in Tianjin (Interview, G20TJ).



They have more autonomy in the management of public finance, land resources and plan and policy making.

Land is often used as an important instrument in economic development and extra-budgetary revenue generation by local governments in China (Wu, 2002; Yeh *et al.*, 2011). It has become the foundation of the entrepreneurialism and developmentalism in China due to the monopolised provision by municipal and county governments. In Tianjin, the land power configurations are reshaped because of the mismatch of administrative and governance framework. The jurisdiction of Tianjin has been generally divided into four parts in the planning and policy realms, namely six urban districts (*zhu chengqu*), four suburban districts (*jiaoqu*), Binhai New Area and five exurban districts (*yuan jiaoqu*). The governance of different parts varies (Figure 8.3) (Interview, G15DL; G20TJ; G28DL). The Central District (within the Outer Ring Road) is an important planning concept that includes six urban districts and parts of four suburban districts. Tianjin Municipal Government takes charge of this area directly in terms of projects development and land management. That means the land leasing revenue within Central District belongs to the municipal fiscal revenue. Similarly, parts of Dongli and Jinnan are controlled by Tianjin Binhai New Area Government. TBNA Government is a sub-provincial level government with a higher political hierarchy than other district governments. The approval power for detailed plans and development control has been decentralised to TBNA Government, along with the land concession revenue (Interview, P01; G20TJ). Five exurban districts are originally counties which have relatively independent fiscal systems. The public fiscal revenue and land leasing income are assigned to local states. These districts retain a certain degree of autonomy in the transition state, but municipal government can more efficiently interfere with the local planning and development than before.



**Figure 8.3 The governance of planning, development control, land management in Tianjin**

Source: Produced by author

### 8.3 Spatial transformation in Dongli and Wuqing

Dramatic growth in Tianjin has not only affected major urban centres but also affected historically smaller settlements and new locations in peripheral area. Tianjin has gone through suburbanisation and peripheral urbanisation along with its rapid economic transition. The suburb and peripheral areas of Tianjin have been densified, complexified and diversified. The spatial configurations of Dongli and Wuqing have also been reshaped during this process. A significant turn could be identified from both the recent new polycentric discourse in Tianjin City Master Plan and from local planning practices.

Following the analytical framework proposed in chapter five, the context, development process, approaches, and scales are key elements to frame the discussion of polycentric policy and practices. After setting up the general political and socio-economic background of Dongli and Wuqing, this section reviews the spatial transformation and the emergence of important development nodes in Dongli and Wuqing.

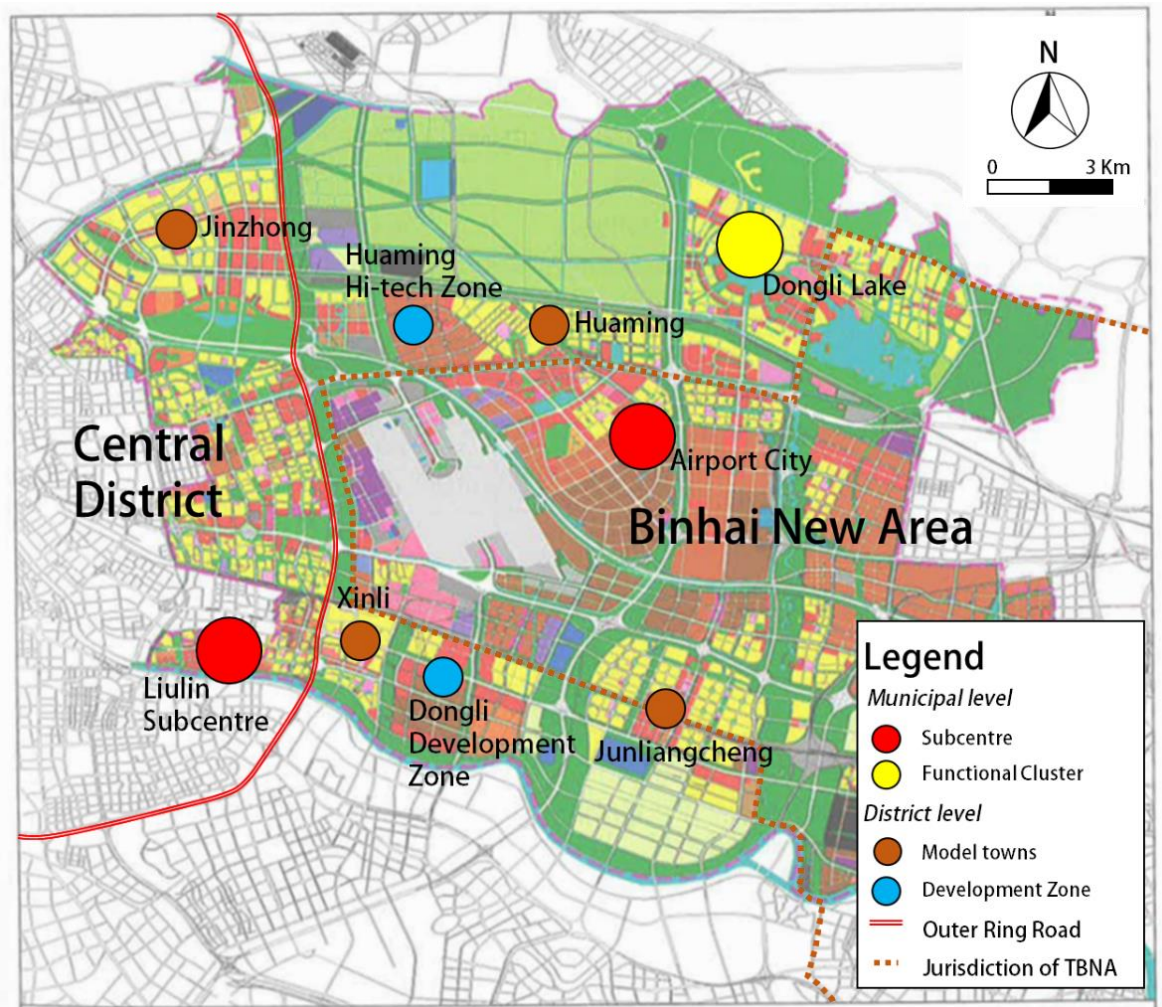
It is necessary to clarify that polycentricity is a scale-sensitive concept here. In these cases, polycentric development has become apparent at both municipal level and local district level. Newly developed and planned centres at the municipal level have significant impacts on the development strategies and planning discourse at the local level and vice versa. The polycentric spatial pattern is becoming increasingly significant within the embedded cases, especially in their recent spatial visions. The historical foundations, interactive scales and government relations together determine the approaches and process of the formation of new centres. Therefore, the analysis involves local polycentric policy and development as well but still mainly highlights centres at municipal level and related policies. In this way, the origins of formation new centres, the role of local government, the contested interests between involved actors and spatial practices to facilitate polycentric development can be investigated in more detail.

### 8.3.1 From multiple enclaves to polycentric spatial pattern

From an evolutionary perspective, the suburban and exurban districts of Tianjin are constellations of many enclaves. These enclaves can be categorised into two types. The first is settlement enclaves such as historic towns, subdistricts and townships, which form the urban system at the local level. The second type is industrial districts, which are often well-defined territories and enjoy preferential or exceptional policies for new development. These enclaves were historically separately distributed and showed a scattered pattern.

In the pre-reform period, Dongli District comprised mainly rural settlements such as townships and villages, and urban activities were still limited to the Central District. At the beginning of reform period, Junliangcheng Town, a former ‘Satellite Town’ was the only place in Dongli that was of any importance in Tianjin’s urban system. After the establishment of Dongli Development Zone, Xinli, where Dongli Development Zone is located, was rapidly urbanised and its administration was adjusted from a township to town. Together with Junliangcheng, Xinli was defined as one of eight urban clusters for decentralisation of population and industries from Central District in Tianjin City Master Plan 1999. Since the turn of the new millennium, Dongli has been fast filled up by many

new economic enclaves designated by Tianjin Municipal Government and its own district government. In addition, with several mega residential projects built up in Dongli, the majority of former rural settlements have been upgraded to subdistricts (jiedao) because of increasing population, modernised landscapes and adjustment in economic structure. In Dongli District Master Plan (2008-2020), the future spatial structure was simply defined by six contiguous economic districts with different leading industries (TJLRCC and TJPB, 2015). Dongli Lake was one of six districts proposed for tourism. Polycentric spatial pattern was not applied to the spatial development of Dongli, but four settlements, Huaming, Junliangcheng, Xinli, Jinzhong (Figure 8.4), were stressed as four important clusters in its future urbanisation process. In the latest Tianjin City Master Plan, three centres located in Dongli were identified in the polycentric discourse of Tianjin. They are Liulin Subcentre, Dongli Lake Functional Cluster and Airport City.

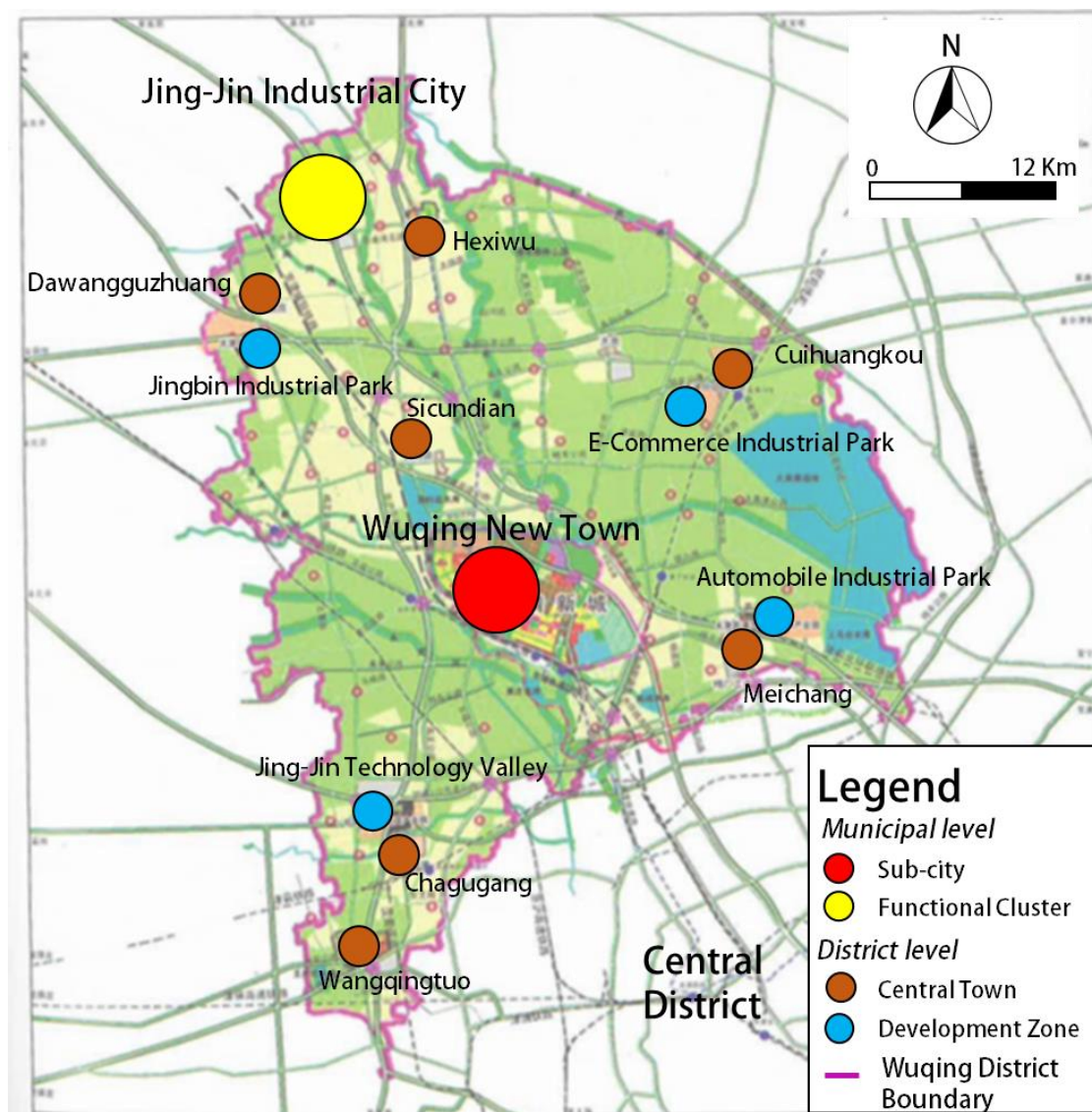


**Figure 8.4 Major centres and enclaves in Dongli District**

Source: Adapted by author based on map from TJLRCC and TJPB (2015)

Similar to Dongli, Wuqing comprised several towns, townships and villages before Reform and Opening-up policy. It used to be a self-contained entity dominated by rural population and agriculture, which was even not included in Tianjin's first approved master plan. Yangcun Town has been the seat of government since 1950 and was the administrative, economic and cultural centre of Wuqing County. The establishment of Wuqing Development Zone in 1992 further enhanced the status of the county town. The county town and Wuqing Development Zone formed the central area of Wuqing. This central area and other central towns, general towns and villages consist of the local hierarchical urban system.

Wuqing has had four editions of its own master plan approved by Tianjin Municipal Government in 1988, 1998, 2002 and 2008 respectively (TJPRCC, 1994; TJLRCC and TJPB, 2015). The first two plans mainly focused on development of the central area of Wuqing. After Wuqing was converted to an urban district, Wuqing faced a new situation and revised the former plan. Considering the investment in real estate and industrial development has increased, the master plan approved in 2002 began to suggest industrial development in other surrounding towns. In Tianjin City Master Plan (2005-2020), Wuqing was defined as one of eleven new towns as new growth poles, which led to a new round of master planning revision in Wuqing. In the revised Wuqing Master Plan (2008-2020), multiple clustered spatial structure has been proposed. Beyond the core area (that is the Wuqing New Town), it also stresses the development of other seven clusters to form a multiple clustered and networked urban system in Wuqing. The clusters often include central towns and the new extensions of industrial development zones next to them (Figure 8.5). However, this spatial pattern is essentially a hierarchical urban system plan and the Wuqing New Town is still the dominant centre. The real change in reshaping the spatial pattern can be identified in the newly emerging succession master plan in which a new spatial layout has been proposed by Wuqing District Government. The discourse of the spatial proposal has been shifted to ‘one axis, two cities and multiple clusters’ (WQDG, 2018). ‘Two cities’ refer to Wuqing Sub-city and Jing-Jin Industrial City, which are two important nodes in the latest Tianjin City Master Plan. However, at the local level, newly planned Jing-Jin Industrial City is not defined as a Functional Cluster subservient to Wuqing New Town. The spatial layout of Wuqing was planned to evolve towards the ‘two cities’ pattern, just like Tianjin’s ‘Twin Cities’ structure (Interview, P01). The subtle changes between municipal and local discourse reflects the ambitious of Wuqing District Government.



**Figure 8.5 Major centres and enclaves in Wuqing District**

Source: Adapted by author based on map from TJLRCC and TJPB (2015)



### 8.3.2 Origins and conditions of new centres

Polycentric transition in Dongli and Wuqing has become significant since the late 2000s. Through the analysis of planning documents and interviews at municipal and district level, several important development nodes have been identified in these two embedded cases. Each case has more than one municipal level centre identified in Tianjin's polycentric system. Polycentric policy and development in Dongli and Wuqing are not only reflected by new designation of mega projects, but also led by the intensification and recognition of important local enclaves through formal planning process. This part analyses the origins and conditions of these new centres in much more detail.

#### *8.3.2.1 A collage of multiple centres in Dongli*

The polycentric configuration of Dongli District has been produced by the interaction and negotiation between governments at multiple tiers and between several adjacent district governments. Dongli District has three different types of centres governed by different authorities due to its location and governance framework. Three municipal level centres in Dongli are distributed in three different parts governed by the Tianjin Municipal Government, TBNA government and Dongli District government respectively. Therefore, the existence of multiple municipal level centres is essentially a collage of centres with distinct purposes and political and institutional arrangements that happen to be in Dongli's territory.

The first is the Liulin subcentre that is first proposed in Tianjin's Strategic Plan. This centre is planned to be a new agglomeration of business and public services in Tianjin Central District. Liulin Subcentre is an important inner subcentre of Central District, located on the south-east fringe of Central District. It is an area of 14.5 km<sup>2</sup> straddling four administrative districts, Dongli, Hexi, Hedong and Jinnan. The decision to building new subcentres in Central District was made by the political leaders of Tianjin when making the strategic plan, because many large cities like Beijing and Shanghai had already started to build new sub-



centres or CBDs at that time (Interview, P04). The site selection and the number of subcentres were suggested by planners (Interview, P03, P05).

Liulin Area was selected because of land availability and a good location. Tianjin Steel and Iron Corporation had been relocated to Binhai New Area and its land was available for development. Moreover, Liulin was a scenic area, the majority of which was occupied by parks and green space. These factors made it much easier for new development to proceed pragmatically (Interview, P04). This area also has a good accessibility to city centre thanks to the connection of subways. Theoretically speaking, the designation of subcentres has two benefits. First, the new subcentres can function as the substitutes of the main city centre to provide business and public services to surrounding area. Second, it is also a tool for place marketing to improve the image of these new developable places. As one planner recalled of the decision-making process relating to subcentres,

*'It is impossible to say how these two centres are determined. But there indeed exist many schemes and they have been discussed and compared many rounds. I think the final scheme was made for two considerations. First, Tianjin's development should follow the Hai River corridor. Second, the relocation of Western Station and works of Tianjin Steel and Iron Corporation provides two parcels of developable land within Central District.'* (Interview, P04)

Tianjin Municipal Government has been responsible for this development since it was proposed. At the beginning, Municipal Government set up a steering office as the administrative body with the deputy mayor of Tianjin as the director. Officials from different departments of municipal government, development corporations, and deputy district mayor of Hexi, Dongli and Jinnan are the members of the steering office. The establishment of the steering office aims to facilitate planning approval process and project construction. However, due to the political reasons, all steering offices for mega projects were withdrawn in Tianjin few years ago (Interview, P03).

The jurisdiction of Liulin subcentre then reverted completely to the Municipal Government and required revisions to plans and introduction of new projects to be approved by Tianjin Municipal Government (Interview, G12TJ). Meanwhile, the land leasing revenue belongs to Tianjin Municipal Government. Dongli District itself has little power and incentive for the development of this sub-centre.

*'Unlike exurban districts like Wuqing and Baodi, Dongli District Government does not have too much incentive in the sub-centre development and land leasing of this area.'* (Interview, G15DL)

Surprisingly, the scale jumping governance did not generate much conflict of interests between different districts and municipal government. This is because the special political and institutional arrangement of Central District had been determined before the proposal for a subcentre. However, the positioning of Liulin subcentre was changed many times, which postponed its development (Interview, P03). A planner who has been in charge of plans for this subcentre for last ten years believes that Liulin subcentre has a greater development potential in near future:

*'There is no substantial development so far, but the land in the planned area has been well prepared for new development thanks to the strict development control of Municipal Government. There is no other place that has such a massive amount of vacant and mature land like this area within Central District. The substantial development will start soon.'* (Interview, P03)

The second important centre is Airport City, which is defined as one of subcentres of TBNA. A large amount of land outside the Outer Ring Road is occupied by the functional zones of TBNA to support the development of TBNA as it has been defined as a regional growth pole. For example, the Western Zone of TEDA was set up as an enclave due to the shortage of land resources in TEDA (Interview, G04BH). The Administrative Committee of TEDA is in charge of this area. In addition, Tianjin Binhai High-tech Development Area and Airport Economic Zone also took up land in Dongli District. These functional zones have their own

administrative committees as functional zones of TBNA are ultimately governed by TBNA Government. It is said that TBNA Government and Dongli District Government have entered negotiations about a sharing mechanism for land leasing revenue and tax revenue because TBNA occupied Dongli's land for industrial development, but because of the ambiguity of administration of Dongli and the higher political tier of TBNA, TBNA Government governed this area and the land revenue were allocated to TBNA (Interview, G28DL). Dongli share 50% of total tax revenue (*ibid.*). These three functional zones constitute the Airport City, which is the important location for industrial development, especially for the aviation and logistics industries. Airport City has taken advantage of the proximity to airport and preferential policies of Tianjin Pilot Free Trade Zone and Tianjin Binhai New Area to become a comprehensive development area with balance of work and residence.

Dongli Lake Functional Cluster is the third urban centre, which is under the control of Dongli District government. It is also planned to develop into a suburban centre by exploiting its good resources. It is a place where high-end real estate and financial and tourism industries should be developed and agglomerated (Interview, G14DL). The status of Dongli in Tianjin's urban system is less important than other suburban and exurban districts due to its fragmented governance arrangements. In recent Tianjin City Master Plans, the core area of Dongli was defined neither as New Town nor as a Sub-city in Tianjin's urban system (see chapter 6).

#### ***8.3.2.2 Two parallel centres in Wuqing***

Wuqing District has two centres at municipal level, namely Wuqing Sub-city and Jing-Jin Industrial City. The rising of Wuqing New Town and the development of new centre at the edge are the main component centres of Wuqing's spatial configurations. Wuqing has gone through different political economy stages. Since its administrative adjustment, the positioning of Wuqing has changed to an important new town between Beijing and Tianjin. Wuqing Sub-city is a new concept in the latest Tianjin City Master Plan, which refers to the central area of Wuqing district. Sub-cities are core urban areas at local district level but play

a similar role of Central District and the TBNA Core Zone (Interview, P05). Wuqing Sub-city has his antecedent that is former Wuqing New Town or explicitly speaking the old county centre, which has been continuously consolidated and expanded during last four decades. Wuqing Sub-city has become a new economic engine of Tianjin.

On the contrary, the parallel Jing-Jin Industrial City was entirely newly planned. It is defined as a functional cluster in the Tianjin's City Master Plan because of its short history and weak socio-economic conditions. This new urban centre is born in the context of central state's rescaling strategy. As Beijing-Tianjin-Hebei Region has become 'new state space', Wuqing District Government attempted to seize the good development opportunity and proposed the new planned centrality at the edge. Then Wuqing District's aspiration got support from Tianjin Municipal Government. The new city was planned to be built up in the border of Tongzhou District in Beijing, Langfang in Hebei Province and Wuqing District and the Jing-Jin express way passes it (Figure 8.5). Different from Wuqing Sub-city, Wuqing District Government selected vacant land beyond the existing central towns and development zones for new development. The planned area reaches 37 km<sup>2</sup> and it aims to develop into a leading zone for industrial innovation, a pilot zone for city and industry integration and more importantly, a demonstration zone for regional coordinated development. It was conceived amid a resurgence of demands for regional cooperation and reflected entrepreneurial government at the district level. Until now, this new centre is still in the proposal phase as the new round of master plan is still in the making progress.

## 8.4 Strategy adjustment at the local level

As discussed in chapter four, District and County Master Plans are required to comply with master plans at the city level in China's planning system. Although the general outline and development strategies are usually made according to higher level master plans, nuances in the discourses of local master plans can still reflect the development strategies and development focuses at local level in the short-term.

Affected by the break-up of its territory and strong intervention by higher tier governments, the governance mode and development strategies of Dongli have been adjusted. Dongli District Government has begun to restress the administrative value. As most key economic development areas have been taken over by Municipal Government and TBNA Government, the major development targets for Dongli District have been adjusted to achieve ‘complete urbanisation’ and improve the ability of urban governance and social affairs management. As one government official in Dongli explained:

*‘Dongli District Government does not have too much ambition about economic development. More than half of jurisdictional area has been occupied by Municipal Government and TBNA District Government. There are few places for economic development. Like urban districts in Central District, Dongli has been urbanised in advance. The major responsibilities are neighbourhood management and population management. The district government has become a service government to a large extent.’ (Interview, G14DL)*

In addition, because of limited land under its own control and limited financial capacity, Dongli District Government relies more on Tianjin Municipal Government in the operation of concrete projects. It also plays a cooperative role in executing policies and coercions implemented by Tianjin Municipal Government.

Unlike Dongli, Wuqing District Government has become more entrepreneurial recently. Due to the incomplete reterritorialization, Wuqing’s land leasing revenue is managed and retained by Wuqing District Government (Interview, G20TJ). Each case of land leasing is recorded by Tianjin Municipal Government and leased publicly and exclusively by Tianjin Land Exchange Centre, an agency subordinate to municipal government. However, in practice the first-class land development and land leasing scheme are usually entrusted to the local Land Arrangement and Reserve Centre or development corporations under the supervision of district governments (Interview, G20TJ). Compared to Dongli, Wuqing District has more incentives as well as more available space for new development. Moreover, Wuqing District Government has actively initiated new development projects and adjusted

future development direction. It is always trying to capitalise on its locational advantage and to reform the regional cooperation mechanism in order to pursue further development.

Wuqing positioned itself as ‘an important new town in Jing-Jin development corridor’ in its master plan (2008-2020). As early as the early 2000s, Wuqing had already started positively to embrace the development of Beijing and attempted to be fused into its hinterland. There are three main reasons for this strategy. First, Beijing developed much faster than Tianjin because better resources and talents tend to be agglomerated in Beijing as a capital city. The economic impacts of Beijing began to extend beyond its administrative boundary. Second, the main development direction of Tianjin has been south-east towards Binhai New Area (Interview, P03; G07TJ). Because of inter-city competition in recent decades, Tianjin’s development focused on Central District, TBNA and places between them. That means that Wuqing was marginalised to a certain degree. Third, the opening of the Jing-Jin High Speed Railway in 2008, the first inter-city highspeed railway in China significantly reduced the spatial barrier of regional integration. Functional ties and relations have been enhanced between Beijing and Wuqing because of the improvement in accessibility.

Since the two cases have adopted new development strategies and values towards administration because of their place speciality, spatial practices regarding polycentric development at both municipal and local district level varies. In next two sections, critical approaches each case adopts will be summarized. These approaches reshape the space and structure of Tianjin and local districts simultaneously. New politics, planning practice and their influences on spaces in the implementation process are main aspects this research emphasises.

## 8.5 Approaches to polycentricity in Dongli: power reshuffles, planning practice, and spatial changes

In recent planning and development practice, two developmental approaches have been applied to Dongli, which have reshaped the spatial pattern of Dongli and had significant influences on polycentric development at both local and municipal level. The first is to

consolidate the rural settlements to designated towns and subdistricts. The second is to build up a new green belt between the Central District and TBNA Core Zone.

#### 8.5.1 Rural consolidation and urbanisation

Since 2005, rural consolidation policy has been widely implemented in Tianjin in the suburban and exurban districts, so this development approach is not exclusive to Dongli. However, Dongli district was the first and the only agricultural-related district which proposed ‘complete urbanisation’ within its territory. The merger of villages and towns has become an important measure to achieve this goal and to accelerate the process of urbanisation.

Land plays a fundamental role in the rural consolidation development mode. Through village mergers, land use rights are renewed from rural collectives and vested with municipal government. The original purpose of resettlement policy in Dongli was to create land for the construction of the Tianjin Airport Economic Zone (Ma and Chiu, 2018). A mechanism called ‘linking the increase and decrease of the land for construction use’ (*zengjian guagou*) is applied which requires that the reduction of rural construction land will be matched with an increase of urban construction land. Meanwhile, the decrease in agricultural land must be compensated by providing rural construction land. This process involves many stakeholders including municipal government, local governments, developers, rural collective committees and rural residents, and the governance modes of these projects varies because of the scale of projects, local socio-economic capacity and the power of rural communities (Ma and Chiu, 2018).

The rural consolidation projects in Dongli were the subject of strong intervention by Tianjin Municipal Government and by District Governments in the process of planning, financing and construction. Huaming Town in Dongli, the flagship rural consolidation project, encountered direct intervention from Tianjin Municipal Government. Although protests emerged during land expropriation and compensation process and negative influences on landless peasants’ lives, this project was regarded as a success by municipal government

with positive image (Heger, 2018). ‘Huaming Model’ was promoted an example for other resettlement projects to follow and was exhibited at the 2010 Shanghai World Expo under the slogan of ‘same land, different life’. It is divided into several different functional areas. The relocation area is for the resettlement of villagers, and the commercial housing area and affordable housing area next to it are used to balance the investment for land expropriation and development. The residential areas are combined with industrial and business areas. The agricultural zone was constructed to offset the losing of arable land.

There are many reasons that explain the intervention of Tianjin Municipal Government in the construction of Huaming Model Town. First, the rural resettlement project aimed to provide land for the Airbus A320 assembly line in Airport Economic Zone (Interview, G28DL), a strategically important inward investment. Second, it was expected to be completed within a short period. The project started in 2005 and the relocation of farmers was completed in 2007 (Wang and Wang, 2014). Third, it is a large-scale project, which involved 12 traditional villages. Almost 42,000 farmers and 805 hectares residential land were affected (*ibid.*). Fourth, Huaming was a vanity project of previous political leader Xingguo Huang who worked in Tianjin as deputy mayor and mayor between 2003 and 2016. Huaming Model Town also got support from municipal government in many aspects. For example, political leaders of Tianjin Municipal Government will use their personal relationships to attract industrial projects to Huaming High-tech Zone (Interview, G28DL).

Huaming Model Town represented a radical reform and a comprehensive development approach, which led to the formation of a new development node in Dongli. First, it cut down the number of villages and consolidated the size and density of the new residential district. The relocated farmers have urban residential status and their houses have full urban property rights (Wang and Wang, 2014). The old villages in Dongli has been replaced by urbanised resident settlement and management structure. With the increasing population and improved urbanity, Huaming town has been adjusted into a subdistrict. Accordingly, higher quality and larger scale of public facilities will be allocated required by the standards for public facilities planning. Secondly, the model town also stresses the economic function, public services and open space to balance the work and life of local residents. The development of



model towns facilitated the economic development and exploited the land value in good locations. For example, because of its location opposite the airport, Huaming High-tech Zone has attracted many top research institutes and high-tech companies (Figure 8.6) and has become the leader among 31 municipal level development zones (Interview, G28DL).

The built environments in Huaming has been significantly reshaped. Previous dispersed villages and small and heavily polluted township industrial parks were demolished and integrated into the Model Town. Both old resettlement communities and newly built high-end real estate projects can be found in Huaming (Figure 8.6). There is also large shopping mall in the town centre serving the whole model town. An Expo Huaming Pavilion was newly built in the business area to introduce the development history and plans of Huaming, with parks, schools and other public space surrounding it. Compared to the business area, the industrial zone developed much quickly, and many office buildings and factory buildings have been built on both side of main road in Huaming Hi-tech Zone (Figure 8.6). Due to its close proximity to the Central District, Huaming Model Town also attracts many new migrants, because of the improvement to the built environment and more affordable housing price. Huaming Subdistrict Office has decided to build an inclusive society for the '*Huaming New Residents*' (relocated farmers)' and '*New Huaming Residents*' (New migrants) (Interview, G28DL).



**Figure 8.6 Built environment changes in Huaming Town and Huaming Hi-Tech Zone**

Source: Photographed by author. Note: (From left to right) Top row: Expo Huaming Pavilion, Town shopping mall. Middle row: new commodity housing in Huaming, Research Institutes in Huaming Hi-tech Zone. Bottom row: office buildings and factory buildings in Huaming Hi-tech Zone.

Government officials recognise that this is an approach that forms a multiple clusters pattern. The model towns integrate the urban settlements, the public infrastructure and industries. A government official who have worked in the planning and land use department over twenty years argued that:

*'In my perspective, the construction of Model Town is also a type of polycentric development. The Model Town means resettlement of several small villages together. It generally comprises one settlement area, a reclamation area and a leasing area. In this way, the scattered village will reorganise into a larger node, like a small society with comprehensive functions.'* (Interview, G11TJ)

Dongli District Government attaches more attention to the establishment of new model towns based on the success of Huaming Model Town, with three others to be completed in the following five years. According to the Mayor of Dongli District:

*'Dongli District plans to abolish all 109 villages in Dongli in the following five years and to build Huaming, Junliangcheng, Jinzhong and Xinli into four New Small Towns. Around 200,000 peasants will be relocated to New Small Towns. In the 458 km<sup>2</sup> jurisdictional area of Dongli, Zhangguizhuang governmental centre, Dongli Lake Cluster, and these four New Small Towns will form six important urban clusters. Dongli will be completely urbanized after that. In this process, we will guarantee the farmers interests and make the slogan 'same land and different life' a reality.'* (TJDRC, 2018)

Through this process, the district government has become a main actor in charge of the policy implementation based on the success of Huaming. However, some local government officials showed their concern about Dongli Districts' new plan (Interview, G23DL; G24DL). For example,

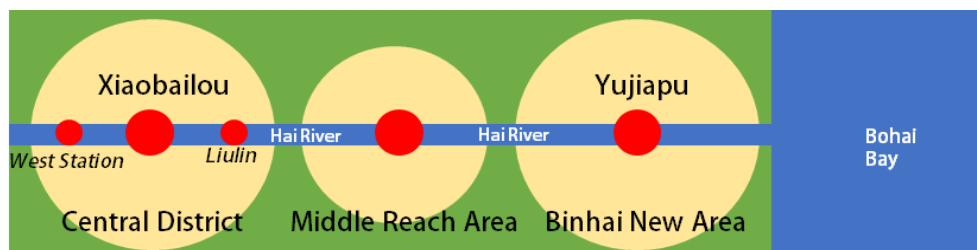
*'It is difficult to complete these projects without strong support of municipal government. These new Model Towns are different from Huaming Model Town. The*

*key point is the speed of land turnover. Huaming could construct the resettlement flats and lease out the land in a short period because of the support from municipal government. But this is impossible for these new Model Towns and therefore they are suffering from funding problems and lack support from farmers.’ (Interview, G23DL)*

In a sum, the construction of model towns will lead to a multiple clusters pattern in Dongli, but they are not a spontaneous process involving the rural population moving to these towns and thereby increasing their importance in Dongli and Tianjin. On the contrary, they are cases of a government-led urbanisation related to revenue-generation land development, land expropriation and a new urban management.

### 8.5.2 A new green belt between Central District and TBNA

*Tianjin Strategic Plan* proposed the development strategy of ‘twin cities and twin ports, expansion towards each other’ (*shuangcheng shuanggang, xiangxiang tuozhan*), which has been institutionalised and applied to the latest Tianjin City Master Plan as well (Interview, P01). The area of the middle reach of Hai River was defined as a strategic area for future development. It was supposed that, with the further development of Central District and Binhai New Area, some important functions like administration would be relocated in places between them to promote coordinated development. Therefore, in the *Tianjin Strategic Plan*, a third main centre for Tianjin was planned along Hai River (Interview, P05). It is also the geometric centre of Central District and Binhai New Area, which is 20 km equidistant from Central District and the core area of TBNA (Shen, 2010) (Figure 8.7).



**Figure 8.7 The planned third main centre in Tianjin Strategic Plan**

Source: Adapted by author, based on Shen (2010: 12)

This third main centre is planned to become the future administration and international communication centre of Tianjin. It is envisaged that Tianjin Municipal Government will be relocated here and high order public facilities such as an exhibition centre and stadiums would be built for potential mega events such as Olympic Games and Expo. Following this polycentric vision, Tianjin Municipal Government decided to implement strong control on an area of 100 km<sup>2</sup>, to reserve this area for future development (Interview, P03).

However, the original positioning of the planned third centre has been withdrawn recently. Instead, a green belt is planned to be established in the near future. The former space reserved space for development has been adjusted to an ecological space. This change is again a response to the new national development principle that stresses ecological civilisation. As one interviewee mentioned:

*'It follows the ecological civilisation stressed by the central state. The area of middle reach of Hai River was supposed to be the key urban development area. But why has the development been halted? Moreover, a large proportion of this area will be forested. In the long run, some villages will be demolished and substituted by green space as well. It is in conformity with the national strategy and requirement.'*  
(Interview, G11TJ)

*'Polycentricity is related to the size, development phases and positioning goals of Tianjin. ...The positioning and definition of centres changed in different phases. There was supposed to be a new centre between Central District and TBNA with a large-scale development to link the core area together. But since last year, it has been revised to a green belt and has already implemented.'* (Interview, G09TJ)

This reflects an ideological shift by Tianjin Municipal Government as well. It began to regard a high-quality environment as an important resource to attract people and investment (Interview, G27TJ). It is intended that the designation of green belt will benefit the overall development of Tianjin. Technically, the construction of the ecological corridor can provide green space for the public. It can also help to curb the unlimited sprawl of Central District

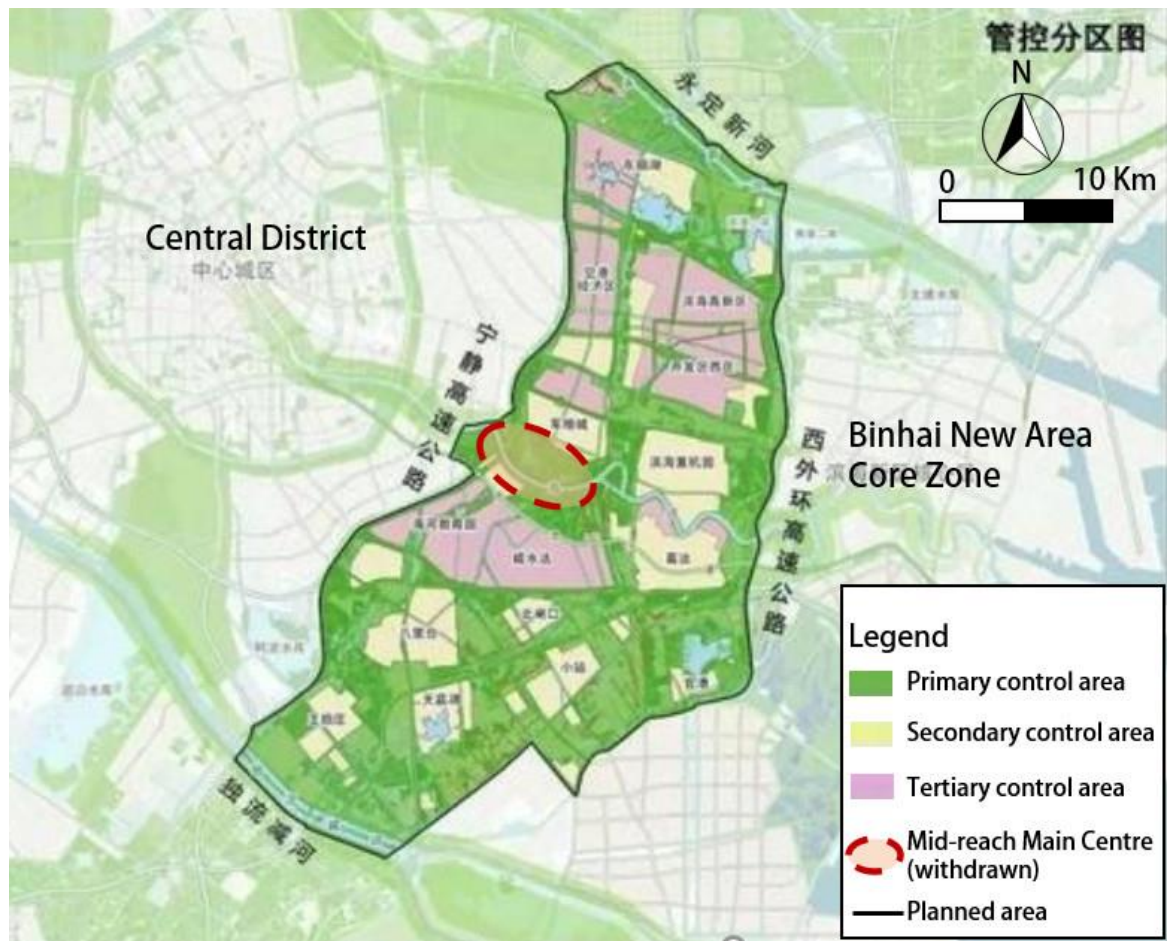
and Binhai New Area and connect the fragmented ecological area together to form a green belt.

*'The demarcation of Basic Farmland and Ecological Area is intended to contain the sprawling expansion. Through the arrangement of agriculture land and planting trees, each centre will be separated. Tianjin adopted a strategy called 'two rings and three corridors'. That means the tree planting is conducted surrounding towns and along roads, railways and the river. In other words, each urban area will become an independent and separated urban society. This planning principle will not change.'*  
(Interview, G11TJ)

Tianjin Municipal Government now affords great attention to the intermediate area in regulation and actual development. Municipal Government carried out 'Tree planting Campaign' to occupy the former reserved land in case of any new development (Interview, P03). In terms of planning and regulation, a detailed scheme was compiled in 2018 and was legitimated as a regulation to enhance government control. According to '*Planning and Regulation on the Intermediate Area between Binhai New Area and Central District*', the in-between area was divided into three types with different control intensity (Figure 8.8).

The regulated area involves five administrative districts with an area of over 700 km<sup>2</sup>. The green belt plan proposed the forest and water coverage rate should reach 65% of the total area by 2021 and higher than 70% by 2035 (TJMG, 2019). Tianjin Municipal Government leads the plan and construction and implements strong control on this area. Each district is required to co-operate with Tianjin Municipal Government in operation. Dongli District is one major district to implement this policy as it accounts for large part of the total area (Interview, G15DL). The planned area is divided in to three different types of control area with different regulations. The basic farmland, river system and ecological area in this area are defined as primary control area. Except for necessary infrastructure, new development is strictly forbidden in this type of control area. The secondary control area mainly includes existing small towns and their size will be strictly controlled. The third level control area are

mature residential area and development zones. Small and polluted industrial parks in the secondary and tertiary control area will be forced to be relocated or upgraded.



**Figure 8.8 The green belt plan and regulations on places between Central District and Binhai New Area**

Source: Adapted by author based on map from website available at [https://k.sina.com.cn/article\\_5177065796\\_13493c14400100kbue.html?from=news](https://k.sina.com.cn/article_5177065796_13493c14400100kbue.html?from=news)

Green spacing is an important element of the polycentric city and urban region (Hall, 2014; Parr, 2008). For Dongli District, the major change is that the original location for the third main centre in the middle reach of Hai River has been categorised into the primary control area (Figure 8.8). It means any new development will be strictly controlled. It is a big change for Dongli's future and status because the formerly conceived administration centre will be substituted by green space (Interview, G15DL). However, the new green belt will facilitate



the physical polycentric development of Tianjin and Dongli. At the city level, two major urban centres have been separated by agricultural green space and by wetland. Also, the boundaries of functional clusters, development zones and New Small Towns in Dongli will be demarcated by the green space. As one government official further explained,

*'All urban clusters and towns are required to be surrounded by a certain area of Basic Farmland, otherwise the planning will not be approved. The agricultural land can encircle the urban area and prevent further expansion.'* (Interview, G11TJ)

## 8.6 Approaches to polycentricity in Wuqing: power reshuffles, planning practice, and spatial changes

The formation of polycentric spatial pattern in Wuqing was a result of local entrepreneurial government to a large extent. Three major approaches that are land-centred expansion, cross-boundary cooperation and physical connection to urban network have facilitated the existing historical central places and created a new centrality in its planning vision. Although Wuqing District has shown greater autonomy, the application of these approaches involves multiple and contested interests inside and outside its territory. The emergence of new centres in Wuqing also has significant impact on the polycentric development of Tianjin City Region and Beijing-Tianjin-Hebei Region.

### 8.6.1 Land-centred expansion

The development of Wuqing New Town, Jing-Jin Industrial City and other development zones are rooted in a philosophy of urban expansionism in Wuqing. As the core area of Wuqing District, Wuqing New Town expanded significantly in recent years. The expansion scheme of Wuqing New Town was ambitious. In 2005, urban construction land was 30.7 km<sup>2</sup> and the population was only 260,000 (TJLRCC and TJPB, 2015). In the New Town Master Plan (2008-2020), construction land in Wuqing New Town is planned to increase to 60 km<sup>2</sup> and the population target for 2020 is 600,000. The size of Wuqing New Town was therefore planned to be doubled in this planning horizon.



The expansion of Wuqing New Town was driven by Wuqing Development Zone and Wuqing High-speed Railway Station, the only stop on the Jing-Jin express line. Residential and commercial areas were concentrated around Wuqing Station and expanded east towards the New Town. Wuqing Development Zone was built up in the north of county town along the Jing-Jin express way, the development corridor of Tianjin. It expanded continuously and comprised several functional zones developed in different phases. The establishment of these development zones helped Wuqing to attract investment and industrial projects as well as to promote urbanisation. Since it was founded in 1992, Wuqing Development Zone was extended in 2000, 2008, and again in 2011. The total area of Wuqing Development Zone is now 55 km<sup>2</sup>, up from 7.4 km<sup>2</sup> in 1992 (WQDZ, 2018). The fourth phase of Wuqing Development Zone has been planned for the north-west of Wuqing New Town and is still under construction (Interview, G21WQ).

The expansion of the built-up area of Wuqing took place initially within Wuqing New Town. Meanwhile, new industrial parks have been planned and emerged around other separated towns since 2000s. These new industrial clusters were initially rural industrial parks and were upgraded to municipal level development zones for specialised industrial development. These development zones have expanded dramatically as well. Taking Jingbin Industrial Park as an example:

*'Jingbin Industrial Park was founded in 2000. Its area reached 3 km<sup>2</sup> in 2006 after few years' development. In 2009, it was approved as one of 31 municipal level development zones and the planned area was enlarged to 9.65 km<sup>2</sup>. Since 2016, the administrative committee has begun to adjust the plan and scale of Jingbin Industrial Park. The planned area may be further expanded to 13 km<sup>2</sup>.'* (Interview, G18WQ)

However, recent expansion has become more rampant. Former expansion was contiguous or next to county towns and other small towns to complement their economic, population and infrastructure base. Recently, in the name of regional development and integration, leapfrog expansion began to emerge in the rural area. In 2013, Wuqing Development Zone extends to a new area in Gaocun in the form of an exclave. Gaocun Science and Technology

Innovation Park as a subordinated development zone of Wuqing Development Zone was newly developed (Interview, G19WQ). In addition, the new ‘edge city’, Jing-Jin Industrial City, proposed by Wuqing District Government also located in Gaocun. Nonetheless, the site for Jing-Jin Industrial city was selected beyond Gaocun Science and Technology Innovation Park to facilitate new development at the edge of Wuqing.

The successive expansion in Wuqing has given rise to a multiply clustered spatial pattern. The land-centred expansion increases the fiscal revenue of Wuqing and in turn provides Wuqing with more funds to prepare new land. The logic is that, first, the large development zones and newly designated industrial parks will contribute to the tax revenues and create new employment opportunities. Meanwhile, the improved built environment and increasing job opportunities will attract migrants and push up house prices. Rising land price and new land leasing will increase the district’s financing ability. This capital circuit will drive Wuqing District to further expand its built-up area for the purpose of generating even greater fiscal income and driving economic growth.

#### 8.6.2 Cross-boundary cooperation

Thanks to the improvement in public transport and the progress of city regionalisation, Wuqing District developed rapidly, and it has the second largest GDP among the 16 districts of Tianjin. Recently, Tianjin Municipal Government proposed a new development concept of ‘four cities’ in its internal discussion, referring to Beijing, Tianjin Central District, TBNA and Wuqing (Interview, G22WQ). That means the governmental and developmental status of Wuqing have been further promoted in the context of the integrated development of Beijing-Tianjin-Hebei region.

In fact, regional integration has become an important theme for Beijing-Tianjin-Hebei region since the early 2000s. Considering the increasing economic disparity between Beijing, Tianjin and Hebei Province, cooperation between Beijing, Tianjin and Hebei was put on the agenda in 2004 by the central state. National Development and Reform Commission (NDRC) encouraged the Development and Reform Commissions of Beijing, Tianjin and Hebei to

hold a strategy symposium in Langfang to search for a consensus on regional economic development. The NDRC also started to make a regional plan after the symposium. However, the plan making took a long time and was not approved by the central state because of conflicts between the regional governments. The boundary effects were still strong in Beijing-Tianjin-Hebei Region. Therefore, in practice, there has been no substantial progress on regional integration. One example is the designation of a regional airport. As one planner recalled,

*'Tianjin would like to cooperate with Beijing, but I feel that Beijing deliberately ignored Tianjin's endeavours. For example, the site selection for Beijing's second international airport and the designation of Xiong'an District. Tianjin is a reasonable and good choice for those projects and had done some preparation. However, in the end Beijing selected the south location rather than Tianjin where Beijing and Tianjin could have shared resources.'* (Interview, P03)

The competition between Beijing and Tianjin is still fierce. The functional relationship between these two major cities are weak and they avoid developing as an integrated region. For instance, one government official mentioned the major development area of Beijing and Tianjin and found that:

*'Beijing developed towards the north while Tianjin developed towards the south in past decades.'* (Interview, G07TJ)

Nevertheless, spontaneous cooperation initiated by lower tier governments has formed for some specific purposes. The development of Jingbin Industrial Park depended on the Langfang Economic and Technology Development Area (LETDA) (Interview, G18WQ).

*'Jingbin Industrial Park and LETDA are adjacent but separated by an administrative boundary. LETDA is a national level development zone. In the initial stage, some enterprises in LETDA were relocated to Jingbin Industrial Park because LETDA has limited available land and stricter regulation on the enterprises' scale, and their*

*economic and environmental performance. Taking advantage of its location advantage close to LETDA, Jingbin Industrial Park has taken on industries that were excluded from or did not conform to LETDA's rules.' (Interview, G18WQ)*

The initial cooperation between LETDA and Jingbin Industrial Park was mainly driven by market forces. This kind of cooperation is spontaneous and there is no need for institutional changes to coordinate the two governments. However, in the face of keen competition between cities and substantially unbalanced development, social inequalities and environmental problems in Beijing-Tianjin-Hebei Region, higher level and comprehensive cooperation is required. The integrated development of Beijing, Tianjin and Hebei region requires the direct intervention of central state for smoother cooperation because this process involves multiple tiers governments and non-government actors.

Since 2014, the coordinated development of Beijing, Tianjin and Hebei has been upgraded to a national development policy because of the emphasis of new generation of political leaders. The 'Jing-Jin-Ji Collaborative Development Plan' was approved by the central government in 2015, which indicated an integrated and coordinated plan will become the priority in near future and will be implemented in practice. Correspondingly, the institutional arrangement and governance modes will be adjusted to reshape the intergovernmental and interjurisdictional relations. Therefore the city region in China has become the 'new state space' to cope with the governance crisis such as intercity competitions and heavily polluted environment (Wu, 2016). The city-region and cross-boundary governance have moved beyond the traditional inter-city relationships and formed a multi-level polity (Yang, 2006).

The reassertion of coordinated development of Beijing-Tianjin-Hebei Region by central government affects local government decision making. Wuqing has become the frontier area for collaborative development, especially the edge of Wuqing District. However, region building means that development strategies and initiatives are no longer implemented by Wuqing District Government exclusively, it is heavily influenced by central state, Beijing Tianjin and Hebei government at provincial level, as well as by Langfang and Tongzhou Districts.

For the central state, the priority task of collaborative development is to solve the challenges that Beijing is facing. Beijing is required to disperse non-capital functions (*fei shoudu gongneng*) to Tianjin and Hebei or to the even larger Bohai Rim Region. By doing this, it is envisaged that the poorly developed Hebei province will receive more industries to stimulate economic development. Meanwhile urban problems in Beijing, such as congestion, overcrowding, high house prices and air pollution can be eased to a certain extent. Accordingly, central state approved two important plans to fulfil the objective of decentralisation. The first is that the Beijing Municipal Government will be relocated to Tongzhou District and the second is that the central state proposes to build Xiong'an New Area as a regional suburb in Hebei Province, which is also remarked as an example of 'new style urbanisation' in China.

The policies and initiatives of the central state play a backstage role in Wuqing's bottom-up entrepreneurialism. Wuqing found a good opportunity to promote development through cross-boundary cooperation, in the north-west part of Wuqing District. The Jing-Jin Industrial City is designated in the name of regional integration and city-regionalisation. The birth of the new centre at the edge is Wuqing District Government's endeavour (Interview, G30WQ). When I worked as a planning consultant for Tongzhou District Government on the 13th Five-Year Plan in 2015, Wuqing District Government proposed an ambitious plan to construct a new city from scratch, crossing the administrative boundaries of Tongzhou, Langfang and Wuqing. In the initial proposal, Tongzhou District, Langfang in Hebei and Wuqing District was each envisaged to provide a certain area of land. During the plan making process, Wuqing District Government actively sought support from Tongzhou and Langfang. In its own 13<sup>th</sup> five-year plan, Wuqing District Government decided to create new centrality and this new city has also been recognised as an important functional cluster in Tianjin City Master Plan showing that Tianjin Municipal Government also supported the development of the new city.

It is interesting that this new centre was supposed to be located on the reverse direction towards Tianjin Central City (Figure 8.5). The broad place between Beijing Tongzhou District and Wuqing District Centre was selected. As one planning official introduced:

*'Previously, the newly planned new towns like Tuanbo New Town and Jing-Jin New Town were located between the centre of districts or counties and Central District. The spatial linkage with Central District is critical. Unlike previous new towns, some new urban clusters created in this round of master plans are at the edge of city, detached from the Central District.'* (Interview, G12TJ)

Jing-Jin Industrial City has also been confirmed as an important industrial platform by the central state to facilitate regional cooperation (MIIT, 2016). However, the site for the new city is leading to tensions between Beijing and Tianjin. The designation of Xiong'an New Area and the location of the Beijing New Airport indicate that the relationship between Beijing and Hebei would be a major concern of the central state and Beijing Municipal Government. From the standpoint of Beijing Municipal Government, environmental improvement is the priority, so that Beijing Municipal Government is planning to build up a green belt surrounding Beijing. In the most recent Beijing City Master Plan, the current location of Jing-Jin Industrial City is defined as an ecological area, forbidden for new development (Interview, G19WQ). Wuqing is looking for an alternative place for this plan. As a local government official noted,

*'Since Beijing is the capital city, we must obey the newly published Beijing master plan and adjust Tianjin city master plan and the Jing-Jin Industrial City plan accordingly. Jing-Jin Industrial City may be re-located to Sicundian, another town to the south of current location.'* (Interview, G19WQ)

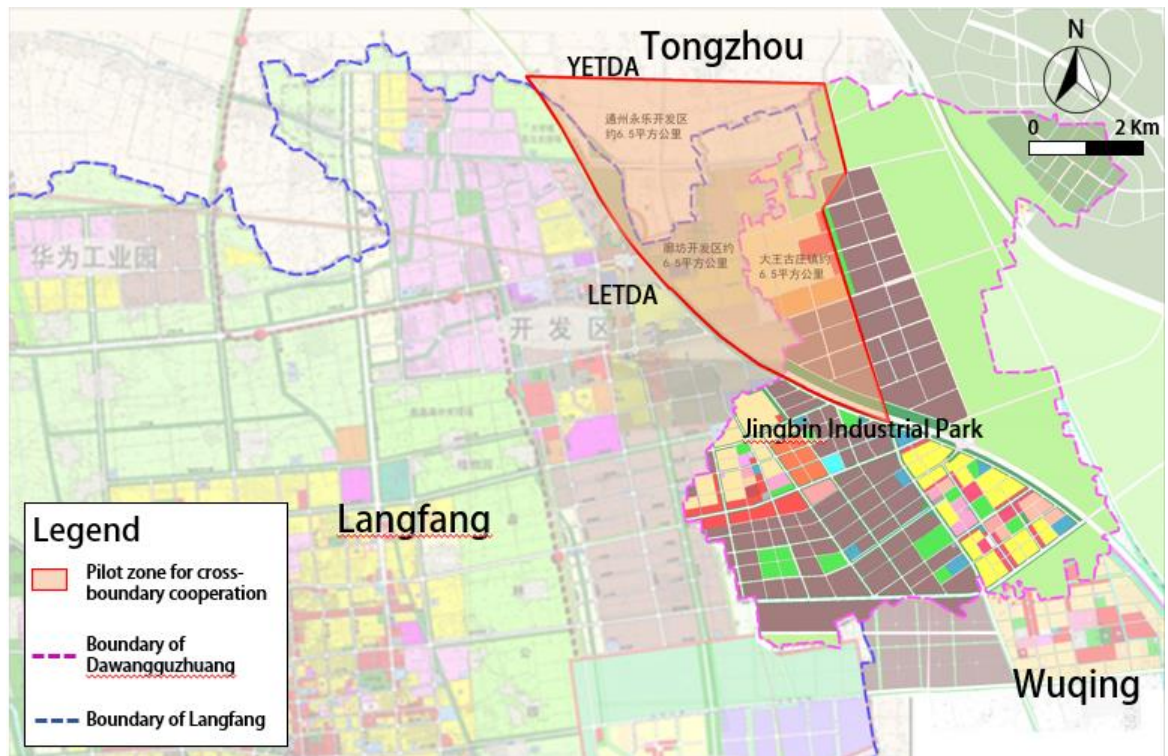
Nevertheless, Tianjin Municipal Government still insisted on finding a cross-boundary location as a demonstration of regional collaborative development.

*'In his field trips to Hebei and Beijing in late 2018 and early 2019, the deputy mayor of Tianjin suggested to find a pilot area to overcome the institutional barrier for regional cooperation. In this context, we proposed to build the coordinated development demonstration zone to the north of Jingbin Industrial Park. Jingbin Industrial Park has a good industrial base and development potential. Tongzhou*

*Yongle Development Zone, Jingbin Industrial Park, and Langfang Development Zone will provide 6.5 km<sup>2</sup> area land to build the pilot area. These areas are not separated, in fact, they are contiguous. The new cooperation mechanism in terms of tax sharing, talents, and common education and health systems will be explored in this demonstration zone.’ (Interview, G18WQ)*

This plan achieved support from three local governments and several thematic cooperation protocols have been signed (Interview, G18WQ). Since Tongzhou was planned to become the secondary administration centre, the economic structure and functions would be adjusted and the regulation for new development would be much stricter than other urban districts in Beijing. The thresholds for industrial development have become stricter and some industries have been forced to relocate or have been closed down leading to the loss of tax revenue and employment. Through the cooperation with neighbouring cities, Tongzhou can achieve functional adjustment by sharing the benefits and costs with neighbouring areas. Meanwhile, Wuqing and Langfang will create new space for development and attract more projects and talents from the capital city.

This new demonstration area looks just like a miniature of Beijing-Tianjin-Hebei region (Figure 8.9). The governance mode of this demonstration zone aims to produce a reciprocal place for three neighbouring cities and so that facilitate the regional balance. Cooperation is based on land interests and redistribution of fiscal revenue and social provision. As argued by Huang *et al.* (2016), newly planned projects at the urban edge will lead to a polycentric spatial structure and extend the polycentricity to a larger scope. Either the Jing-Jin Industrial City and the demonstration zone in Jingbin Industrial Park will facilitated polycentricity at urban and regional scales after they achieve substantial development.



**Figure 8.9 A pilot zone for cross-boundary cooperation between Tongzhou, Langfang and Wuqing**

Source: Adapted by author, based on map collected from Jingbin Industrial Park Administrative Committee.  
 Note: LETDA: Langfang Economic and Technological Development Area; YETDA: Yongledian Economic and Technological Development Area

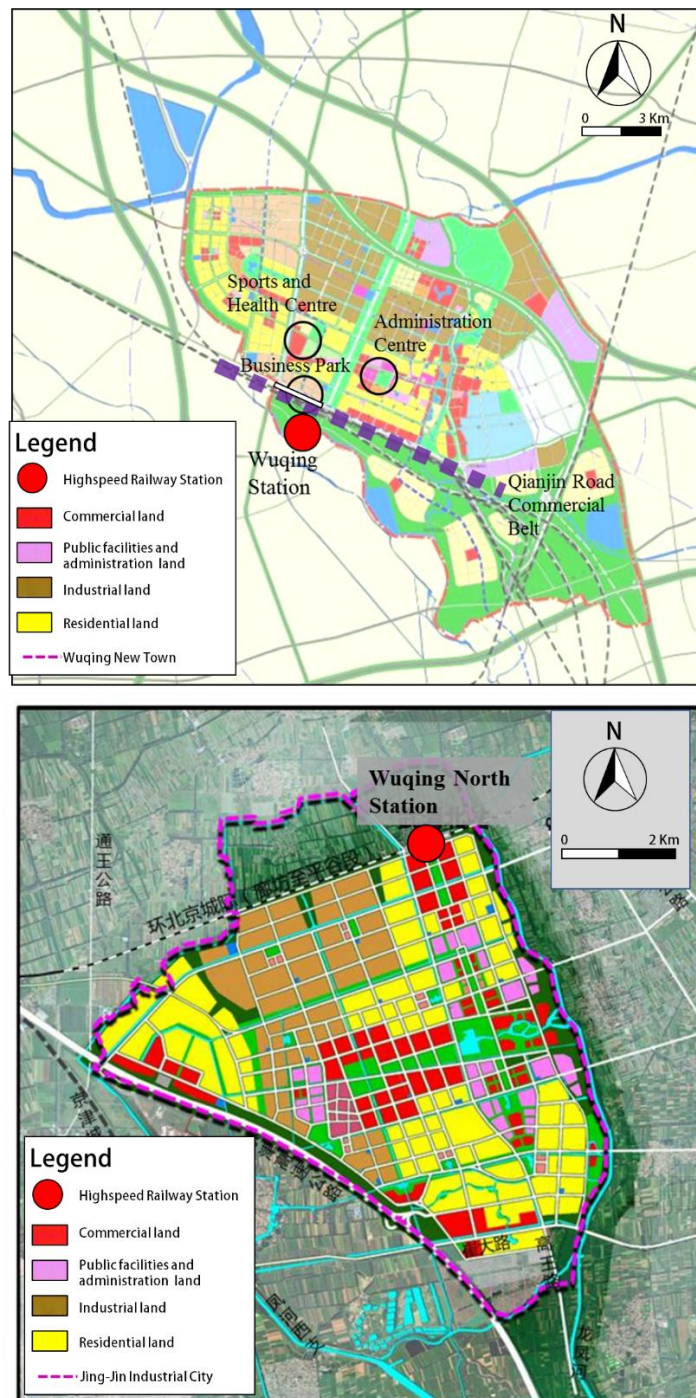
### 8.6.3 Joining the urban network through the TOD mode

According to the international experience, new towns or town centres often adopt the Transit-Oriented Development (TOD) model to join themselves to the larger urban network. For the peripheral area, efficient transport connecting it with a more central area is the key element for its development. Public transport hubs are often identified as local centres with mixed land use, high density and modern landscapes. The TOD development model is not just a design approach for community development or improvement of the accessibility to jobs and public transport, it has become the building block for regional development (Dittmar & Ohland, 2012). In this content, the TOD principle is an important means for Wuqing to join the regional urban network so that it can enjoy the regional and network economies, especially benefit from the access to Beijing (Figure 8.10).



For Wuqing, the most important public transport is the inter-city High-speed Railway, which has been in operation since 2008. Wuqing is currently the only stop between Beijing and Tianjin Central District. It only takes around 20 mins to get to Wuqing Station from Beijing South Station and 10 mins from Tianjin Station. In the context of policy convergence in variegated development zones, the availability of High-speed Rail has become the most important advantage for Wuqing New Town and the Wuqing Development Zone (Interview, G21WQ; G22WQ). The efficient public transport allows Wuqing to exploit the regional market and to access to high-order services and employment opportunities possible.

In the Wuqing Master Plan (2008-2020) and Wuqing New Town Master Plan (2008-2020), the location of Wuqing High-speed Railway Station was also defined as the district and New Town centre (TJLRCC and TJPB, 2015). Other public transport such as buses were suggested to be well connected to the transit station. Public transit services are also coupled with commercial services, administration and public space (Figure 8.10, 8.11). The commercial, administration, public facilities and residential land were also distributed close to Wuqing Station and a commercial and business zone was designed in front of Wuqing Station. A large Italian themed shopping mall called 'Florentia Village' was built in front of Wuqing Station in 2011 (Figure 8.11), a mega commercial facility that aims to serve the regional market. A large proportion of customers are from Beijing and other parts of Tianjin rather than residents in Wuqing District. In order to attract more regional customers, the outlet reimburses customers' high-speed railway tickets if they meet a spending benchmark. Wuqing District Government is also located not far from the Wuqing Station and many high-rise residential buildings and public facilities have been constructed around the station (Figure 8.10, 8.11). This area has become a high-end community in Wuqing District with good access to public transport and high-quality facilities.



**Figure 8.10 The application of TOD principle in Wuqing New Town (top) and Jing-Jin Industrial City (bottom)**

Source: Adapted by author, based on maps from TAUPD (2008) (top) and from website (bottom) available at [http://www.sohu.com/a/129227739\\_634857](http://www.sohu.com/a/129227739_634857)



**Figure 8.11 Built environment changes in Wuqing**

Source: Photographed by author. Note: From left to right: Wuqing High-speed Railway Station, exterior of Florentia Village, interior of Florentia Village, Wuqing District Government building and Cultural Square.

The newly established Jing-Jin Industrial City at the edge of Wuqing is intended to be connected to the high-speed railway as well (Figure 8.10). The line of Capital Ring Intercity High-speed Railway (Langfang to Xianghe part) has been approved by NDRC to connect important cities, towns and mega infrastructure in Beijing-Tianjin-Hebei Region. Because of the new plan of Jing-Jin Industrial city, Wuqing North Station was planned to be constructed, which will link this new city with Beijing Daxing International Airport and Langfang. This station will be the second high-speed railway station in Wuqing. In the Jing-Jin Industrial City Master Plan (2016-2030), the high-density and mixed use of land near to the planned transportation hub was stressed as well (Figure 8.10). Through the TOD mode, Jing-Jin Industrial City will become an important new centre in Wuqing and have chance to get better resources and development opportunities from Beijing and Hebei. However, because the adjustment of Jing-Jin Industrial City, the scheme for the station setting will be affected as well (Interview, G19WQ).

The TOD mode also means the development of a multimode transportation system. The subways and light rail may become another potential advantage for Wuqing (Interview, G21WQ; G22WQ). A new subway line is planned to be extended to Wuqing, which will connect Central district, Beicheng District and Wuqing New Town. Then it will be extended to Langfang in the form of light rail and will be connect to another cross-boundary light rail that starts from Tongzhou, crosses three counties (Xianghe, Dachang and Sanhe) in Langfang and arrives in Pinggu District in Beijing. That means this line will link Wuqing New Town and Jing-Jin Industrial City with Beijing Tongzhou District and Langfang. The connection between Wuqing and other cities in the region will be enhanced in future through the combination of multiple transport modes.

In addition, several important expressways connecting Beijing and Tianjin Central District and Binhai New Area pass through Wuqing and set exits there. Expressways can facilitate transportation of goods and people by trucks and mobile cars. First, the Jingjin Highway is a development axis of Wuqing, and Wuqing New Town expanded along the Jingjin expressway. Second, other towns and industrial development zones such as Jingbin Industrial Park also attempted to have more expressway exits to have better access to other cities (Interview, G18WQ).

*'Jingbin Industrial Park is close to the four highway exits, and we applied for a new exit and got approval from municipal government. The construction will start by the end of 2019 and the exit can be put into use in 2021.'* (Interview, G18WQ)

The good location has attracted many e-commerce businesses to the Jingjin E-Commerce Industrial Park and Jingbin Industrial Park (Interview, G12TJ; G18WQ). Due to the large regional market, these companies have not only set up their warehouses here, but also their computing centres and accounting centres (Interview, G18WQ). Wuqing also provides some higher order functions that serve the whole region. It has also borrowed functions from Beijing and Langfang. Benefiting from the prosperous job market and housing market in Beijing, many migrants buy homes in Wuqing but work in Beijing, so that Wuqing's housing market is much more prosperous than other exurban and suburban districts. Indeed, it is also the only exurban district that comes within the scope of Tianjin's house price restriction policy (Interview, G22WQ).

In short, the TOD mode was applied to Wuqing New Town and Jing-Jin Industrial City to enhance their centrality through local urban design and land use control. Moreover, through joining the larger urban network, Wuqing District can borrow size and function from other key urban agglomerations, especially Beijing. This approach promoted urban function and upgraded industrial structure of Wuqing as well as boom local real estate development.

## **8.7 Comparison of polycentric development between Dongli and Wuqing**

Dongli and Wuqing are no longer peripheral areas, distinguished by their traditional core-peripheral relations with the central city. Dongli and Wuqing has shown a polycentric spatial pattern in their visions and development trends, which constitute more than one municipal level centre and several other development clusters. These development nodes are a mix of a new urbanity and a rural legacy. Exotic modern buildings, large scale shopping malls, and advanced transport facilities can be found but remnants of rural lifestyles and undemolished rural dwellings still exist. The emergence of new centres in Dongli and Wuqing are important components of polycentric system of Tianjin, but they have shown many differences in terms of governance, planning and spatial changes, compared to Central District and the TBNA

Core Zone in Tianjin. This section summaries the characteristics of emergence new centres and compare the logics, politics and spatial outcomes of two embedded cases systematically.

### 8.7.1 The emergence of centres in-between

The relationship between central and peripheral area in Tianjin has become more complex, dynamic and ambiguous. Dongli and Wuqing are much more dynamic and complex than traditional city centre. They have shown some features of in-between space that comprises the post-suburban economy.

The in-between space is a new landscape of urbanisation characterised by mixed land use, a relatively balance of residence, work and leisure, hybridity of culture and social groups and the fuzzy boundaries (Keil and Young, 2009; Wu and Phelps, 2008; Young and Keil, 2010). It is a new pattern and process of suburbanisation that straddles the lines of traditional city and traditional suburb and contests the binary dichotomies of urban and rural landscapes and the core-periphery relationship (Young and Keil, 2010). Phelps (2004) defined the in between space like suburbs, edge cities, technopoles as relatively new locations between established urban centres. In China, some particular zones in the urban fringe have shown some elements of post-suburbanisation (Wu and Phelps, 2008).

Based on extant literatures, the in-betweenness of post-suburban area could be regarded as a place between city and suburb, a functional relationship between the forces of centrality and dispersal and a new political relation between traditional bounded territory governance and multi-level governance involving non-local government. The centres in Dongli and Wuqing can be regarded as in-between space because they embody typical features of in-betweenness.

The in-betweenness of centres in Dongli and Wuqing are reflected in three aspects. First, from the geographic situation, new centres in these two districts are located between major established urban centres, Beijing, Tianjin city proper and the TBNA. They were previously hinterlands of key urban centres with little influence on the development of key urban nodes. However, they have become key areas in terms of the implementation of polycentric development strategy in Tianjin recently. The emergence of new centres and approaches they adopted have generated great influences on urban spatial structure and the regional

urbanisation. Secondly, with respect to their governance framework, the political, economic and social relations with other places have penetrated administrative boundaries and have reshuffled the inter-scalar power relations through reterritorialization and rescaling in these two cases. The governance boundaries in these two districts do not coincide with their jurisdictional boundaries. Thirdly, in the spatial material term, these two places are in a transitional state. They are no longer simply traditional suburbs or specialised industrial districts but have shown a blending of city and suburban features. The central places in these two cases are formed through densification and modernisation process. Former rural landscapes were replaced by high-end commercial and residential facilities and modern infrastructure. Former rural populations were either actively or passively urbanised in the last decades. However, the new centres still show deficiency in vitality and identity, compared to traditional city centre. Several newly planned centres or clusters in both Dongli and Wuqing are facing uncertainty and challenges in their projected transition to actual urban centres.

In-between space is said to reflect problems and challenges such as the lack of plan and regulation, splintered infrastructure and a lack of clear spatial imaginaries (Keil and Young, 2009; Young and Keil, 2010). However, the new centres in-between considered here have become the new growth poles of Tianjin. Their economic and demographic growth are much more significant than other areas. In addition, these centres have become new frontiers of experiment and innovation in urban policy and planning practice as well. They are often endorsed by ambitious master plans of concrete projects and linked with clear spatial imaginaries and positioning. Correspondingly, land use, public facilities and key transport infrastructure are arranged preferentially to these places.

### 8.7.2 Differences between these centres

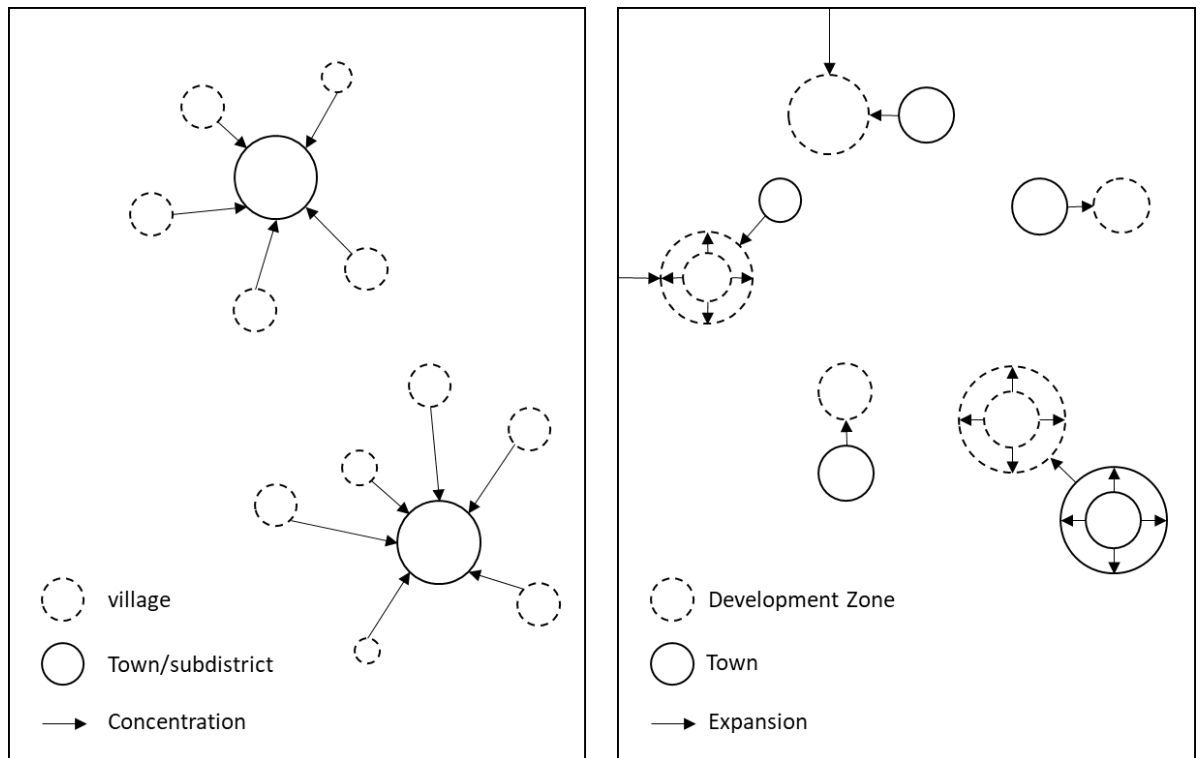
From the discussion above, development strategies, governance mode and spatial changes vary between Dongli and Wuqing. This section summarizes the main characteristics of their spatial development modes and their origins as important nodes and governance mode in Dongli and Wuqing.

### *8.7.2.1 Spatial development mode and the role of land*

Wuqing adopted an expansionist approach and Dongli adopted a centralisation mode in term of spatial development (Figure 8.12). In Dongli District, major changes in spatial terms were the designation and development of model towns. Villages have been demolished and the rural population has been resettled to the Model Towns. The resettlement projects have relocated people to designated residential districts so that district government can provide better services and improve the level of urban management. This development mode also creates new urban land for development. The land in model towns has become legal urban land and the land use right and property right are all legitimated by the transformation of rural construction into urban construction land. The corresponding industrial park and commercial real estate projects further promote urbanisation. From the morphological and administrative dimension, they have urban identity, although the change in lifestyle imposed upon the resettled peasants difficulties for many of them.

On the contrary, Wuqing District has greater incentives and ambitions to facilitate economic development and urban expansion. Wuqing New Town has expanded continuously. Other central towns in Wuqing also developed their own development zones nearby. These rural development zones were expanded and upgraded to important industrial clusters of Wuqing. In addition, new ‘edge cities’ and demonstration zones for regional integration have been planned at the boundary of Wuqing. Through the continuous expansion and new designation of demonstration zones for regional integration, Wuqing District has been able to acquire more land development quota. And the revenue for land leasing can increase the fiscal revenue and invest into infrastructure construction and new land consolidation.





**Figure 8.12 Spatial development mode in Dongli (left) and Wuqing (right)**

Source: Produced by author

#### **8.7.2.2 Origin of clusters: newly planned or consolidated**

It is difficult to distinguish clearly driving forces that facilitate the formation of new centres and clusters in Dongli and Wuqing. Some centres are newly proposed by political interests, and some existing urban clusters are often confirmed as important centres by planners according to technical rationality. Newly planned centres need the support of market rationales such as low land cost, good location, and access to major infrastructure. In addition, state entrepreneurialism in China is a governance mechanism characterised by the combination of planning and market instruments (Wu, 2018). Existing urban settlements will further develop into important centres with the support of municipal and central states. Therefore, the formation of new centres is affected by the joint forces of planning and the market.

This research defines the origin of emerging centres in cases according to their initial status. From a historical perspective, the formation of new centres can be divided into four types, namely top-down planned, top-down consolidated, bottom-up planned and bottom-up

consolidated (Table 8.2). The top down mode refers that the new centre is proposed and funded by the upper level governments such as central state and municipal government. Bottom-up planned mode means that centres are newly proposed by local district or county governments from bottom. Bottom-up consolidated mode means the new centres are historical settlements and gradually consolidated by planning and market forces.

Consolidated development is often related to easy accessibility to harbours, airports, railway stations and so on. The nodality of these facilities can improve the importance and attractiveness of new centres. Places near these facilities have greater potential to become important centres. Sometimes, new centres would be selected as the priority places to build these facilities to enhance their centrality. For example, Wuqing Sub-city was proposed based on the historical county town. It has developed fast through continuous expansion and industrialisation. Since a new High-speed Railway Station was built here, its status became more important in the polycentric system of Tianjin. Therefore, Wuqing Sub-city is a bottom-up consolidated centre. In addition, the newly planned Jing-Jin Industrial city is an artificial bottom-up centre, but one high-speed railway station is planned to be built to enhance its centrality. Beyond these two municipal level centres, central towns and general towns in Wuqing grew spontaneously and new development zones were planned and developed by local governments besides these towns for industrial development.

For Dongli District, two of three municipal level centres were designated or initiated by Tianjin Municipal Government. Liulin subcentre in Central District, Airport Economic Zone and TEDA West Zone were newly planned because of good location and available land resources. They are proposed in the top-down approach. Dongli Lake Functional Cluster is one newly planned important centre on behalf of local government's interest. Dongli District also has four model towns facilitated by the municipal and district government through rural consolidation and urbanisation. The traditional residential districts were consolidated through the concentration process. These micro centres are counted as bottom-up consolidated approach except Huaming Model Town, which is funded and initiated by Tianjin Municipal Government.

**Table 8.2 The approaches to the formation of centres**

Centres	Approach	Consolidated	Newly planned
In urban system of Tianjin	Top-down	--	Liulin Sub-centre; Airport Economic Zone;
	Bottom-up	Wuqing New Town;	Jing-Jin Industrial City; Dongli Lake Functional Cluster;
In urban system of districts	Top-down	Huaming Model Town;	--
	Bottom-up	Junliangcheng, Jinzhong and Xinli Model Towns; Central Towns in Wuqing;	Jing-Jin Technology Valley; Jingjin E-Commerce Industrial Park; Tianjin Wuqing Automobile Industrial Park; Jingbin Industrial Park

Source: Summarized by author

#### ***8.7.2.3 New politics in the formation process of new centres***

Dongli District government is relative weak and fragmented. Its jurisdictional area has been divided to three parts governed by Municipal, Binhai New Area District Government and Dongli District Government respectively. Liulin subcentre and Airport City are proposed and governed by Tianjin Municipal Government or TBNA Government. Dongli has little to say about these areas. The major responsibilities of Dongli has been adjusted to improve the ability of urban governance and social affairs management. Therefore, Dongli District government has become a service government and shown a return to administrative function. The spatial change in Dongli District are more likely to be influenced by Tianjin Municipal Government or TBNA Government. It has become a location where initiatives and experiments of municipal government can be carried out. Dongli District has implemented urbanization through consolidation of small village settlements and hence several medium-scale urban settlements have been formed at the district level. Meanwhile, there is also an enhanced control of ecological space functions that act as green belts between these clusters and between Central District and TBNA, which will facilitate polycentric spatial pattern. The development ambition of district government was further weakened by the new strict regulation on the construction of a green belt. It is a top-down regulation and Dongli District Government just play a key role in the implementation process.

On the contrary, Wuqing District government has strong power with more autonomy. It stimulated economic growth through creation of new economic space in past decades. It also takes advantage of its close distance and convenient connection with Beijing to attract investment and talents at the regional scope. In the context of the re-emphasis of regional integration by the central state, new spaces in the name of regional integration have been proposed by local district government and got support from Tianjin Municipal Government. The planned 'edge city' acts as the pioneering and pilot zones for regional integration. However, the new proposal conflicts with the interests of Beijing and are required to be revised. A new cross-boundary cooperation project was proposed by Wuqing District Government and Tianjin Municipal Government based on Jingbin Industrial Park. This project is planned on the boundaries of Beijing Tongzhou District, Langfang LETDA and Jingbin Industrial Park. It is operated under the intergovernmental negotiation mechanism involve three local governments under the supervision of three different cities. Wuqing planned to build a reciprocal place at the edge that can facilitate the cross-boundary cooperation and benefit for its local economies at the same time.

## 8.8 Conclusion and discussion

As Anas *et al.* (1998) argues, subcentres are sometimes arrayed in corridors. Inner city subcentres, suburban centres, newly planned edge cities, and important clusters have been recognised and developed along the major development corridors of Tianjin (Interview, P03). These key parts of Tianjin's polycentric spatial structure are located in two districts, Dongli and Wuqing. This chapter has selected these two districts as cases and examined the rationality, governance and development process of new formation centres in the intermediate area of Tianjin. Special attention has been given to the recent new governance arrangements, planning practice and spatial changes related to the implementation of polycentric policy.

Dongli and Wuqing were suburban and peripheral area of Tianjin for a long time. Both Dongli and Wuqing have experienced dramatic growth and urbanisation since the open door policy. Recently, these two districts have evolved into hotspots of new development in Tianjin and begun to show a polycentric development pattern since the late 2000s. Several centres at municipal level have been developed or planned in Dongli and Wuqing, which

reshaped the spatial structure of Tianjin and local districts simultaneously. However, an analysis of the origins and conditions of new centres in Dongli and Wuqing reveals that these centres have distinct development trajectories because of their different geographical, historical and political contexts. Dongli's polycentric form is a collage of three centres governed by Tianjin Municipal Government, the TBNA Government and Dongli District Government determined by the fiscal and administrative relationship between them, while Wuqing has produced 'twin cities' spatial pattern within its territory in its planning vision due to local entrepreneurialism government and the central state's rescaling strategy.

Consequently, the two cases have adjusted their development strategies and adopted distinct approaches to forge new centres or facilitate polycentric development because of their place speciality. Dongli stresses its administrative function and proposes to achieve complete urbanisation in near future. Dongli attempts to consolidate the rural settlements to model towns following the 'success' of Huaming Model Town. It also needs to coordinate with Tianjin Municipal Government to build the new green belt which separates and controls the size of Central District, TBNA and model towns in Dongli. Wuqing District Government still stresses local development and growth, but in the name of regional integration to bid for higher level governments' support. It attempts to improve the significance of existing Wuqing New Town and create the new centrality at the edge through land-centred expansion, cross-boundary cooperation and physical connection to urban network.

By comparison of the two cases, the centres in Dongli and Wuqing has shown some common features as in-between spaces in the polycentric system in terms of the locations, development status and governance modalities. The distinction between the peripheral area and central area has therefore become blurred. These centres located between major established urban centres, are characterised by qualitative transformation in structure, function and governance. Urban density has been increased and new functions have been added in privileged centres in Dongli and Wuqing. Moreover, development projects with special purposes have reshuffled the inter-scalar power relations including multi-tiers and cross-boundary authorities. Nevertheless, differences exist in the spatial development mode, origins and new politics in the development process of specific centres (Table 8.3).

**Table 8.3 Comparison of polycentric development in Dongli and Wuqing**

<b>Dimension</b>	<b>Wuqing District</b>	<b>Dongli District</b>
<b>Location</b>	Between Beijing and Tianjin; An exurban district	Between Central District and Binhai New Area; A suburban district
<b>Governance</b>	Strong and autonomous	Weak and fragmented
<b>Major objectives</b>	Economic development; Regional integration	(Rural) urbanisation; Social affair management
<b>Spatial development approach</b>	Expansionism; TOD mode	Centralisation; Green belt
<b>Centres at municipal level</b>	Wuqing New Town; Jing-Jin Industrial City	Liulin Subcentre; Airport City; Dongli Lake Functional Cluster
<b>Key nodes at the district level</b>	Central towns and Development Zones	Model Towns
<b>Physical connection with major centres</b>	High-speed railways; Express ways	Light railways; Subways

Source: Summarized by author

In conclusion, the centres ‘in-between’ in Tianjin are more dynamic and restless. In-between spaces have become the foci for implementation of new planning practices recently. The analysis in detail shows that the planning rationality, governance modes and the spatial outcomes in Dongli and Wuqing are heterogenous. This finding verifies and unpacks the complicated relationships between political powers, professionals and spatial changes in polycentric transition of Tianjin from a more local perspective.

Meanwhile, the findings of this chapter reassert the argument in chapter six that polycentricity is an assembly of fragmented projects and a power product that finds its justification through the work of the planning profession. Polycentric development in Dongli, Wuqing and even Tianjin is still land-centred and project-based, which will pose three challenges for sustainable development. First, new centres are important development projects and are often planned and selected to be built in places where land is easier to acquire. The new development of land can promote local development and financing. These new places are often not well connected and integrated with other urban centres by public transport in the initial stage. Second, the consolidation process aims to produce new

development quota for new projects sometimes, e.g. Huaming Model Town. This approach may generate negative economic and social impacts on vulnerable groups. Third, planning is still critical and the state and developers are main actors in the planning and development process of new centres. The lack of public participation may lead to the failure of ambitious plans because lack of market demands and public identity.

## **Chapter 9 Conclusion: toward a Chinese approach to polycentricity**

### **9.1 Introduction**

Polycentricity has been identified as a prominent feature of modern landscapes as well as a buzzword in spatial planning at a range of scales worldwide. Since the Reform and Opening-up Policy in 1978, major cities in China have experienced significant polycentric transition manifested by their new spatial policy framework and reshaped urban spatial structure. The polycentric transformation recently has provoked academics' interests in structural and performance analysis in quantitative ways. Nevertheless, there is little research that investigates the formation and implementation of polycentric development policies in Chinese cities from a processual and critical perspective.

In response to polycentric transition in China and in order to fill the gap in research, this research aims to investigate how polycentric development is applied in spatial planning and implemented in practice in China's transitional context. More specifically, this research provides answers to the following two questions, as indicated in the introductory chapter: (a) what are the underlying meanings and rationality of polycentric urban development in the policy and planning discourse in China? and (b) how concrete centres in polycentric system are created, governed and materialized to facilitate the implementation of polycentric policies? A detailed examination was conducted in the overall case of Tianjin and three embedded cases within its administrative region.

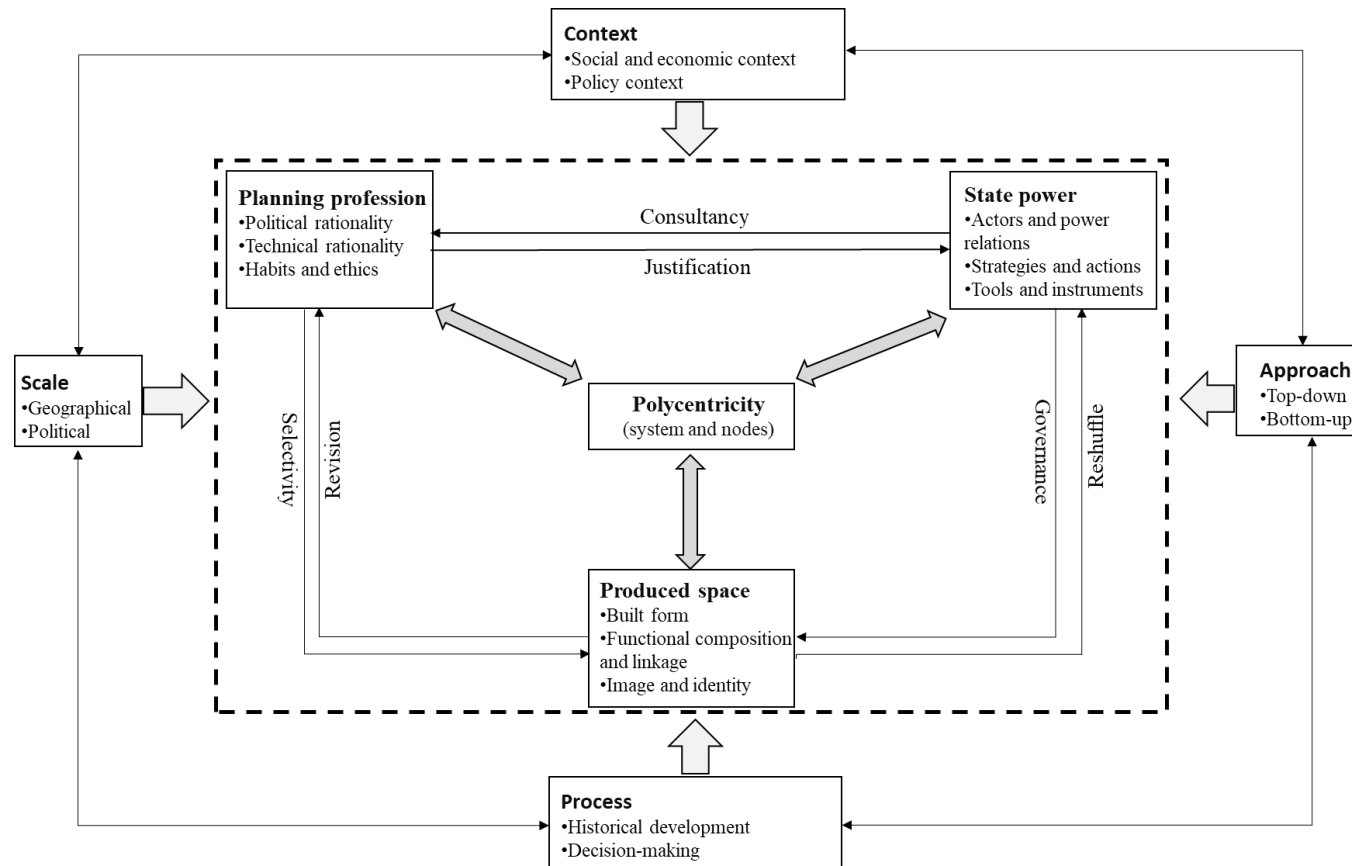
This chapter draws together the empirical findings in previous chapters with reference to the aims and objectives. It starts with a summary of key findings on the formation and implementation of polycentric development strategies in China. Then it discusses its main contributions to debates on polycentricity particularly and literature on Chinese urban development generally. Following that, the implications on policy and plan making are analysed. The last section suggests the possible directions of future research.



## 9.2 Summary of major findings

Polycentricity has been researched in multiple disciplines and from different standpoints. This research is carried out from a perspective of spatialised political economy, which interprets the polycentric discourses, power relations and urban space critically and regards polycentricity as a product of the articulation of their influences. To enable an empirical analysis in this way, this research first explores concepts and theories of polycentricity and unfolds major polycentric configurations into an assembly of key elements. Then it investigates the planning and governance of polycentric development at a variety of scales in the European context to explain the reasons for the popularity of this concept in spatial planning and the factors affecting its implementation. Based on these discussions and drawing on theories of production of space and politics of space, a novel theoretical framework is developed, which can bridge policy making and implementation, integrate vision and reality, and link power, knowledge, and space together. This framework comprises three key components that are state power, planning profession and produced space, which are framed by four key dimensions of polycentricity that are context, scale, process, and approach.

The theoretical framework was successfully applied to empirical analysis in chapters 6, 7, and 8. Key themes that consist of the framework were identified and critically discussed in each empirical chapter. The framework provided analytical angles and guidance for the analytical procedures in a systematic way. More importantly, this research framework successfully helped to address the twofold research questions. The first research question was addressed in chapter 6 and the second research question was fully answered in chapter 7 and 8. Dialectic relationships between the core components, state power, planning profession and produced space, were confirmed and supplemented by the major findings in empirical research (Figure 9.1). The most significant findings in previous chapters will be drawn in this section, which revolve these three key components and their relationships.



**Figure 9.1 Re-examining the theoretical framework and the relationships between state power, planning profession and space**

Source: Produced by author

### 9.2.1 (Re)formation of polycentric discourses and their underlying meanings

This research first aims to investigate how the polycentric development strategy is applied into spatial planning in contemporary China. The findings from chapter 5 and 6 suggest that the special backgrounds in China including features of political framework, periodisation of power relations, shift in planning ideology and the dynamics of socio-economic environment make the Chinese approach to polycentricity unique. The case of Tianjin demonstrates that the concept of polycentricity has been deployed in different ways with variegated composition of different elements and the underlying meanings changed in its four editions of City Master Plan under a variety of circumstances. Furthermore, it is argued that the production and legitimation of distinct polycentric discourses is essentially a political and multi-scalar process, which is disguised and justified by the planning profession.

#### *Distinct discourses of polycentricity embedded in Tianjin City Master Plans*

Chapter 6 investigated the discursive changes to polycentricity in nuance and their underlying meanings by applying the analytical framework and a policy discourse analysis. The case of Tianjin shows that the City Master Plan in China has a long tradition of referring to polycentric development. However, it is argued that the planning discourses regarding polycentricity have been shaped and reshaped in successive city master plans, which are embedded in China's wider transitional process. Through a discourse analysis of four master plans since the Reform and Opening-up policy, significant discursive turns can be identified in Tianjin City Master Plans, which can be defined as 'polycentric urban settlements', 'functional polycentricity', 'polycentric growth nodes' and 'nested polycentricity' (Wang *et al.*, 2020).

This research shows that the concept of polycentricity has been applied at different scales and urban functional dimensions in Tianjin. The discourse of polycentricity in the 1986 Master Plan referred to a 'polycentric urban system' or more explicitly 'polycentric hierarchical settlements' within Tianjin's jurisdictional area. This discourse was shaped based on already existing historical urban settlements and was essentially an embedded urban system concept. The discourse in the 1999 plan stressed functional specialisation and interaction among different activity clusters rather than just settlement morphology. Due to the transition to decentralisation, marketisation and globalisation, specialisation and

exploitation of the advantages of the CBD and port became the focal point of the polycentric spatial pattern in order to improve economic efficiency. The polycentric discourse in the 2006 plan was characterised by rampant entrepreneurial narratives which promoted a polycentric spatial pattern consisting of many growth nodes, such as a new 'core' of TBNA and 11 new towns. The discourse in the most recent master plan is much more complicated compared to former plans. Nested polycentricity means that the concept of polycentricity has become a normative agenda for a wide range of geographic units and it applies not only to population and economic activity, but also to the delivery of public services, although they may overlap in terms of spatial distribution.

### *Mechanism of power and institutionalisation process*

The evolution and construction of discourse is a reflection of the malleability of the concept or polycentricity that should not be restricted to a technical interpretation because the production and legitimation of distinct discourses is primarily a multi-scalar political process. As shown in the account of changing discourse of polycentricity in Tianjin's master plans in chapter 6, the discursive practice of polycentricity in Tianjin's planning involved multiple scales and strong state intervention. Polycentricity acts as a 'policy glue' for distinct ends and serves the interests of governments at different levels. Compared to the contests between different government tiers, the conflicts within the planning system and between different government departments are not prominent in the formation and legitimation of polycentric discourse.

This research has drawn out the multi-level polity that variously involves the central state, regional authorities (informal entity or authorities of neighbouring area), municipal governments and district or county governments in different phases of plan making, plays important roles in (re)shaping the discourse of polycentricity. First, central state is the primary and the top-level government in the authoritarian policy regime. Although the control of central state has been weakened since the marketisation reform and the devolution of power to local governments, the central state can still exert its institutional capacity to reassert its control and governance ability in multiple ways, such as stricter spatial regulation, designation of specific projects and imposition of particular forms of city regional governance. Secondly, the emerging regional governance and planning have impacts on the competitive and cooperative relationships between constitutes cities and districts, which will

reshape the components of polycentric discourse. Thirdly, Tianjin Municipal Government itself has played a crucial role in the scaled political system. Municipal government initiates the development strategies and defines the future spatial pattern by following the incentives and coercion from the central state, coordinating inter-city relationships and balancing the internal interests from bottom simultaneously. Because of the limited resources, financial constraints and the pressure from upper level, it includes local demands selectively and hence reformulate the discourse of polycentricity. Finally, district governments are also active actors in the process of shaping new discourses and reforming governance mechanisms. The changing strategies of upper level governments have adjusted local development strategies and governance frameworks. They may create new nodes by themselves or strive for mega projects to become important development nodes in Tianjin's polycentric system for the purpose of place marketing and economic competitiveness.

Multi-level governments adopt different strategies to achieve their aims and interests. Through an institutionalisation process, polycentric discourses appear to be well coordinated with other plans and policies, and well matched with political power. The legitimisation of these distinct discourses in the institutionalisation process further reflects by five main sets of actions or policies:

(1) Legislation of formal and informal plans. City Master Plans are statutory in China. The planning area, key principles, and approval procedure are all set out in Urban and Rural Planning Act. The discursive changes are synchronous with the evolving process of master plan. Moreover, Tianjin Municipal Government legitimised non-statutory strategic plan in an Ordinance in 2011 and thereby gave the 'twin cities' spatial structure a legal basis.

(2) Administrative rescaling. The importance of new centres in the polycentric system is in accordance with the rank in political system. For example, Binhai New Area has been adjusted to a sub-provincial level district and Liulin subcentre was rescaled to be governed by Tianjin Municipal Government.

(3) Administrative annexation. Several formerly independent counties were incorporated as urban districts of Tianjin to mitigate the conflicts between counties and cities, and important projects within their boundaries were selected as key nodes of Tianjin, e.g. Jing-Jin New

Town. Similarly, three urban districts were annexed by Binhai New Area and therefore a new networked polycentricity pattern could be formed there.

(4) Establishment of administrative committee and development corporations. Almost all centres such as New Towns, new CBDs in the polycentric system have established their own administrative committee and development corporation responsible for detailed planning and construction.

(5) Demarcation of ‘three lines and three zones’ (*sanqu sanxian*). Master plans also integrate the content of Major-functional Zone Plans and recent new practices such as the demarcation of growth boundary, ecological area, etc. A spatial regulation plan is proposed as one important chapter of recent plans, which defines the morphological frame of Tianjin.

### *Role of planning professions*

The empirical findings show that planning professions are intertwined with the state power and political interests in shaping the discourse of polycentricity. Interviews with planners suggest that planners are essentially representatives of government in China. This fact is also asserted in the principle of ‘governmental organisation, expert leadership, departmental coordination, public participation and scientific decision-making’ in the regulation of *Measures for Formulating City Planning* (MOC, 2005). Meanwhile, governments and politicians impose their own ideas on planners as the state maintains the approval power and the client status in plan-making process.

That is not to say that the role of planning professions is passive or unimportant. This research argues that planners recognise the politicians’ intentions and attempt to articulate them into plans masked with professional knowledge. Polycentric spatial pattern is taught as rational and ideal urban form in planning education and training. It is also regarded as a universal principle for urban planning in China considering historical and physical conditions. However, the fuzziness and fluidity of the concept creates space to accommodate consensus or to allow the play of contested interests and policy experiments. It can be seen, therefore, the discourses of polycentricity, acting as ‘policy glue’, are an articulation of multi-scalar power in China, rather than a process of systematic, technical analysis.

Moreover, planners employ theories and classical concepts like ‘agglomeration economies’, ‘urban network’, ‘new town’ and ‘green belt’ or coin new concepts to support new spatial proposals or development agendas, as shown in the discourse analysis of city master plans and the evidence in embedded cases. These concepts explicitly or implicitly refer to a polycentric spatial pattern based on the evidence from literature. The involvement of various stakeholders and their interests are thereby disguised and justified by planning profession. Also, planners have their own professional ethics and habits when providing consulting service to governments. Although planners need to compromise with political power because of domination of state power, they also attempt to make the final plan more scientific and pragmatic. More specifically, planners provide rational schemes for polycentricity, suggest site selection of new projects and allocate land use quota and public infrastructure to enhance centrality, as shown throughout the research. Their technical knowledge can reformulate the constituent elements of polycentricity as well as generate significant influences on concrete implementation of polycentric policy.

### *Polycentric system in Tianjin*

Based on analysis of planning documents in four versions of the Tianjin City Master Plan, it is clear that the polycentric system in Tianjin is becoming more significant and complex. Drawing on these master plans, a polycentric system consisting of multiple centres of various size and types and at a variety of scales is identified in Tianjin in chapter 6. Current polycentric system form through extension and adjustment of the old ones.

It is evident that the planning rationality, evolution process and spatial outcome of constituent centres in this system is heterogeneous because of the differences in their history, positioning, development status as well as the key actors involved in its formation. The development status and development potentials vary from interviewees’ perception. At a rough scale, traditional city centre, Binhai New Area Core and Wuqing Sub-city are regarded as centres in Tianjin’s urban system. Key nodes such as two sub-centres in Central District, Airport City and Eco-city are expected to become new centres in future.

### 9.2.2 From vision to implementation: production of new centres

This research further aims to examine how the polycentric development policy is implemented in practice in China's transitional context. As a result of discussion in chapter 6, centres are fundamental components in the polycentric policy framework in China and they are characterised by different planning rationality, evolution process and spatial outcome. Based on this view, chapter 7 and 8 selects specific centres in Binhai New Area Core Zone, Wuqing District and Dongli District outside the traditional central area as embedded cases to answer this question by investigating the political process, planning rationalities, approaches to improve centrality and changes in space in specific centres. The empirical findings from local perspective make it clear how centres in Tianjin's polycentric system are created or formed by involving a variegated multi-level polity and what are the strategies, initiatives and actions that these actors adopt to build and consolidate new centrality to better deliver the polycentric planning vision. Correspondingly, it is shown that these centres have experienced distinct development trajectories and shown different spatial outcomes from the perspectives of urban form, functional composition, and spatial identity.

Chapter 7 employed the infamous Yujiapu CBD in Tianjin Binhai New Area as the first embedded case. Yujiapu CBD was built from the ground-up and shows particularities in its grand scale, political importance, and extraordinary failure. It was designed to become the new centre of TBNA Core. Yujiapu CBD project is a state-led flagship project in Tianjin with a combination of multi-level governments' efforts for multiple purposes and its development was heavily influenced by the central state. Yujiapu CBD received direct support of central state in terms of very generous funding and a whole catalogue of preferential policies. Tianjin Municipal Government and TBNA Government also had great intentions to promote its development to stimulate economic growth.

In chapter 8, the attention was transferred beyond 'twin cities' of Tianjin to the intermediate places, Dongli and Wuqing. These two districts are traditional suburban and peripheral locations of Tianjin, but they have become the new focus of development very recently. The formation and development of new centres in these two districts are largely led by Tianjin Municipal Government and local district governments. The case of Dongli shows the complex relationships between Tianjin Municipal Government, TBNA Government and Dongli District Government while the Wuqing case reflects the intergovernmental



relationships between the governments of Wuqing, Tongzhou and Langfang, which is affected by the central state's new regional integration plan as well as the contested interests of Beijing and Tianjin Municipal Government. These two urban districts were analysed and contrasted. The results reveal the similarities and differences in development approach of centres in-between.

### *Instruments for construction of new centres*

From the detailed cases analysed in chapters 7 and 8, the tools or instruments the states at different levels often used to consolidate new centrality and facilitate polycentric development can be categorised in six ways.

(1) Planning and urban design are applied to improve the image of places, to guide the concrete construction or to implement stricter control. For instance, Yujiapu CBD held an international design competition to promote Yujiapu as a globalised and modern CBD. Meanwhile, the TOD principle was widely applied in Yujiapu and Wuqing, and a new green belt plan was made in Dongli.

(2) Financial and development corporations are established to be responsible for the investment and construction of new centres. They are affiliated to and controlled by governments and play important role in the governance and development of concrete projects. Development corporations could raise money from financial market to develop new land, build public infrastructure, etc.

(3) The majority of new centres are policy enclaves which have clear boundaries for the implementation of exclusive preferential policies. Preferential policy can attract firms and migrants to these designated centres.

(4) Land was used as the collateral to finance new development and the tool to stimulate economic growth in two respects: new development urban land and the appropriation of rural collective land.

(5) Public sector functions and social infrastructure controlled by governments are primarily allocated to new centres to improve their vitality, liveability, and connectivity.

(6) Institutional innovations are carried out for a better delivery of new policies and new projects. This is most evident in the newly planned edge city, Jing-Jin Industrial City. Traditional governance mode based on development within city boundaries is being supplanted by a new multi-level polity to facilitate cross-boundary cooperation. A demonstration area is planned to be built on a physically adjacent area to facilitate the cooperation between them by reducing administrative barriers.

### *Heterogenous urban space in polycentric system*

Tianjin has shown an ambitious polycentric vision in its plans, which comprise different types of centres such as historical urban settlements, newly planned functional clusters, agglomeration of public services and economic activities. The analysis in chapter 7 and 8 proves that Tianjin indeed developed towards a polycentric city. However, it can be found that gaps and contradictions exist between the spatial visions and actual development. Chapter 7 and 8 investigate the spatial changes of newly designed and emerging centres and the results shows that their urban landscapes and development status have shown distinct feature, which can be summarized from the perspectives of morphology, function, and perception.

Physically, centres such as Yujiapu CBD and Wuqing New Town are significantly intensified and their layout is characterised by mixed land use and compact pattern, juxtaposing industrial zones, modern civic amenities, high-rise housing and office buildings and public mass transit. The former rural and county landscapes have been substituted or supplemented by new urbanity in the peripheral area. Some other places, supposed to be new centres, are well protected from any development, as shown in the case of Liulin Subcentre in chapter 8. New centres such as Jing-Jin Industrial City which are planned very recently are still in the conceptual stage, and there is no substantial construction because of huge uncertainty in the context of political and planning system reform.

Functionally, the existing centres and newly planned centres are all well connected with major centres in Tianjin and wider region via motorways, high speed railways and subways. Better transportation links have been planned or under construction to further improve their physical linkages. However, the functional linkage between centres are relatively weak except that they are all closely tied with central District of Tianjin. Major development nodes

are expected to develop into comprehensive functional centres and previous separated industrial zones are also encouraged to integrate with nearby urban settlements. Therefore, each centre has become much more independent and hence competition between them has also increased. In terms of functional composition, the secondary sector is still the pillar of suburban and exurban centres as shown in Wuqing and Dongli, although high-tech industries, new economies and modern services are emerging in these places. Functional positioning of centres in Dongli and Wuqing were also adjusted recently to respond to new conditions, accompanying by power reshuffles.

Perceptually, Tianjin was recognised as a polycentric city (region) by majority of interviewees because of the existence of the TBNA and the new development of CBD, sub-centres and new towns. However, the image and identity of the centres in the polycentric system varies due to the differences in urban forms, functional composition, and political and policy importance. Only few centres were identified as genuine centres or potential centres by the informants. There exists evident gap between the planning and the lived experience. This contrast is even more significant in Yujiapu CBD case. Although, an agglomeration of modern buildings has been constructed and political supports from multiple tiers of government have been given, Yujiapu CBD is still regarded as an infamous ‘ghost city’ and a failed government project. Moreover, the identity of CBD was not stable and easily affected by the political changes. With the CBD policy now withdrawn due to political changes, Yujiapu CBD is gradually disappearing from policy documents and public awareness. In the area beyond the Central District and the TBNA Core, places such as Wuqing sub-city were identified as emerging centres. From the empirical case in Wuqing Sub-city, it shows that the factors such as history, economic size, geographical location, industrial base, and well-established networks are still more important in shaping the identity of being new centres.

## 9.3 Contributions

### 9.3.1 Contributions to the debate on polycentricity

This thesis enriches the current debate on polycentricity significantly. In general, this dissertation, using Tianjin as an in-depth case study, explores the construction and reconstruction of polycentric discourse in plan making and reconfiguration of governance

and urban landscapes in specific localities during policy delivery through a processual analysis. As the polycentric transition is embedded within a wider urban transformation and evolution of planning system in China in past five decades, this research is an important contribution to the understanding of the rational for and the overall pattern of Chinese urbanisation and urban transformation more generally. Moreover, it offers wider insight into how planning acts as a mechanism whereby competing views on urban development can be reconciled and political actions can be legitimated with the help of planning professions in China. In particular, a Chinese approach to polycentric development emerges based on the case study of Tianjin. This qualitative research helps to rebalance the literature and to understand the genesis of the policy narratives and practices surrounding this concept in China. The contributions are reflected in following aspects.

First, this research provides a new perspective for understanding spatial restructuring in decision making and implementation process in China, which more fits the messy world of policy and captures the interaction between political, technical, social and economic factors. Previous research on polycentricity in China mainly focused on spatial analysis and performance evidence of polycentricity at both urban and regional scale and imported this concept simply ignoring the Chinese unique context. Majority of these studies on polycentricity are empirical research drawn upon the theory of polycentric model and theory of agglomeration economies. Recent research has begun to investigate the role of state policy in spatial restructuring from the state-market or state-society paradigm, which shed lights on spatial pattern changes at macro level or general trend (regional development, urban rural relations, changing urban system, land-based expansion, etc) (Lin, 1999; Wei, 2012). These studies offer important insights into the urban reality and the role of state, policy, and planning in the shaping process. Few insights have been shed on this specific topic, although some work has been conducted in this direction. For example, Cheng and Shaw (2017) provides an overview of application of polycentricity in master planning in Chinese eight cities. However, their analysis is conducted in a superficial way, which merely presents and compares the expression of urban spatial structure in planning documents. They realised the differences between the expressions but ignore the power and rationality configuration underlying these differences or adjustments. Liu and Wang (2016) recognise the political factors and the power of planning when they find the quantitative results are consistent with ‘polycentric’ master plan. Huang *et al.* (2017:38) also argue that the urban planning is one

of important factors affect the transformation of urban structure in China. Nonetheless, their arguments lack the considerations of historical conditions and features of planning such as contingent rationality, infusion of conflicts and performance.

The critical discussion about the nature and process of polycentricity at intra-urban scale remains very scarce in the literature. Giffinger and Suitner (2015) argue that the shift from the structural to processual understanding polycentric development is important. This dissertation, using Tianjin as a case study, brings to light the emerging and changing polycentric discourses in its master plans since 1978. This research examines the polycentric transition along with the historical process of fast urban growth and the changing implications of different actors including different levels of states. Different from empirical research on polycentricity, it adopts a social constructionist approach to reconceptualise polycentricity. It highlights the role of scalar politics and state interventions in the planning making process in China. Through a processual analysis, this research finds that China has a long tradition to embrace this concept and use polycentricity as an umbrella concept to accommodate new spatial elements and contested interests. There is a debate in Europe that if the concept of polycentricity is just a case of old wine in a new bottle (Luděk *et al.*, 2009). The results of this research show, on the contrary, that the same concept of polycentric development is embedded in China but with distinct components, meanings and political intentions in different phases. The discourses of polycentric development in China's plans are an articulation of multi-level governments' interests and a justification by planning professions rather than a systematic, technical, 'professional' analysis.

Secondly, this research builds up an analytical framework which identifies key elements that need to be considered when analysing polycentricity, either in policy or in real development outcomes. This framework includes three key components, planning professions, state power and produced space, which are framed by context, scale, approach, and process. The changing macro environment, societal, historical, and geographic factors, and the political process inherent in strategy-building will influence the policy discourse and urban spatial structure (Wu and Yeh, 1999; Giffinger and Suitner, 2015). This framework includes these elements and hence enables contextual and place-based analysis. In this way, it also provides space for comparative studies between China and the west. As introduced in literature review, polycentricity has been widely discussed in the planning and policy realm in Europe. Polycentricity has become a popular planning tool as the conceptual ambiguity of

polycentricity has enabled multiple interpretations (Shaw and Sykes, 2004; Rauhut, 2017; Granqvist et al., 2019). The reproduction of polycentric policy framework takes place at different spatial scales and involve multiple administrative levels (Richardson and Jensen, 2000; Gloersen *et al.*, 2007). This research is the first explication of the Chinese case. China bears a resemblance that has taken place in western Europe. However, the power struggles, claims of knowledge and planning tools embedded in the reproduction process are distinct from those in the western, as illustrated in empirical chapters.

In addition, this framework deals with scales in a reflective way. On one hand, this thesis analyses the polycentricity at the intra-city level based on multiple geographical scopes, which reflects a dynamic development process of both central city and peripheral area and considers interactions with a larger region. On the other hand, the political scales that are tied to political and economic power is included into analysis, which is often reshuffling and interlocking with geographical scales. Therefore, applying this analytical framework can help to explain polycentricity explicitly in terms of its components, functions, scales and objectives. As Van Meeteren *et al.* (2016) argue, the loose definition of polycentricity that is just like Babel's Tower hinders the academic debate on polycentricity. A more explicit explanation provides opportunities to eliminate barriers for academic communication and bridge a common language between policy-making and research.

Thirdly, the analytical framework developed here can also be extended to cities and regions in both China and other countries, which will facilitate further international comparative studies at a variety of scales. The findings based on the case of Tianjin can be extended to other cities in China with reasonable confidence, because other cities are facing similar opportunities and challenges in the transition process. However, it does not deny the existence of variegated interpretations because of the differences in history, the size, political ranks, and topographic factors. Special political-economic and socio-spatial contextual factors in China not only provide conditions for polycentric transformation but also make the polycentric development a unique and new approach, which is not consistent with Europe or North America. These differences in major concerns, geographical scales, governance and driving forces can be discerned from the literature review and empirical analysis in this research. Because China has experienced dramatic economic growth and urbanisation in contrast to a less urbanised and industrial society in past decades, polycentric development policy is mainly achieved through continuous creation of new centres. Cities in China have

a much larger spatial scope than cities in Europe, and therefore, polycentric development policy is most often applied at intra-city scale and began to emerge at regional scale during recent city cluster development in China, whereas in Europe, polycentric development plays important roles at transnational and urban region scales.

Polycentricity is also worth more attention within the policy and planning research in China. Different tiers of government and their affiliated institutes are key actors in the process of formation and implementation of polycentric development policy. Different from western countries, states in China have strong power and credibility and they invent many tools based on the unique state-owned land system and authoritarian political system to facilitate polycentricity. This research also shows the importance of planning in governing social-spatial changes in China. Planning centrality is a salient feature of state entrepreneurialism in China (Wu, 2018). This research verifies this argument through the evidence of specific centres such as Yujiapu CBD but also further highlights that planning still maintains its power under the new planning ideology to implement stricter control or to facilitate regional cooperation based on Dongli and Wuqing cases. In sum, planning as part of the state apparatus is not only a platform for the operation of polycentric discourses but also an instrument for promoting new mega projects and hence for better delivery of polycentric policy.

Finally, the heterogeneous space in polycentric Tianjin echoes with the literature on post-suburbia or in-between spaces (Phelps, 2004; Wu and Phelps, 2008; Young and Keil, 2010). The emerging centres in Tianjin's suburban and exurban area show some feature of post-suburbia or in-betweenness, such as the increasing density, mixed land use and ambiguous governance. This research argues that the territories 'in between' and the urban fringe are not marginalized in China, while on the contrary these places are more dynamic and restless regarding polycentric development. However, the planning rationality, governance modes and the development outcomes for these new centres are heterogenous. Therefore, detailed analysis of new urban governance and development of these places also shed light on the urbanisation and governance in suburban and peripheral area.

### 9.3.2 Methodological reflections

In terms of methodology, this research employs discourse analysis to investigate formation and institutionalisation of polycentric discourses in China's master planning embedded in wider social and political changes. The discourse analysis is conducted based on official planning documents and is complemented by semi-structured interview. This qualitative analysis provided an in-depth and better understating of genesis of and plurality of policy narratives surrounding the topic of polycentricity.

The discourse analysis approach adopted in this research is mainly inspired by extant research on environmental planning and policy, e.g. Hajer (1996), Sharp and Richardson (2001), Keil and Debbané (2005), based on the influences of Michel Foucault's theoretical work. The theoretical foundation and differences between text-oriented discourse analysis and Foucauldian approach discourse analysis have been discussed in methodology chapter. Therefore, this section attempts to emphasise the value and usefulness of this approach based on the experience of this research and to argue for potential application to planning research in China.

Foucault inspired discourse analysis is a very distinctive research approach compared to other analytical approaches, which extends the analysis to the practice and implications on the real world. In this research, the discourse analytical framework drawing inspiration from Foucault and like-minded scholars provides a cogent explanation of the formation process of discourse of polycentricity. Jensen (1997: 17) argues that using discourse analysis, '*the agent and institutions must be considered, as well the hermeneutic practice of interpreting documents and actions*'. The discourse analysis approach used in this research was deployed around the articulation of these themes including language part, power and rationality relation and institutionalised practices. By exploring these elements in fine detail, this research reveals the agents involved in the discursive practices and their struggles and motivations, the spatial strategies used in this process. Discourse analysis approach allows the richness of analysis and directs to different insight into polycentric development in China.

The approach traces the historical roots and temporally discursive practices of polycentricity in the case study, which suggests the plurality of discourses of polycentricity, as shown in the summary of major findings discussed above. This approach also places the reproduction



of discourses of polycentricity in wider historical and contextualised conditions. In each period, there indeed exist many different wider discourses held by different agents and inundated with conflicts and negotiations, such as discourses of pro-growth, development control, regional integration, sustainable development, new urbanisation, etc. The wider discourses communicate with each other and construct particular discourses of polycentricity because of the hegemony of certain discourse or the emergence of new wider discourses. It is clear that, each polycentric discourse identified in city master plan in Tianjin has a clear storyline to make the planning outcome coherent. Hajer (1995) emphasises the importance of storyline, which can allow actors to draw from various discourses to give meaning to specific phenomenon. The Foucault inspired discourse analysis helps to identify the dominant storylines in different periods and hence to explain the contributing elements in the policy discourses. It enables to analyse how the discourses are produced and reproduced in the inter-discursive communication through investigating the combination of language uses and knowledge claims.

Another value of this approach is that the discourse analysis also assists in providing in-depth explanation of power and rationality configurations in the plan making process. As introduced in the chapter one, this research focuses on the power relations underlying the planning output. This part of analysis suits this starting point of this research and explains who are involved, whose claims are included, for what purposes and in what ways. Foucauldian approach argues that the articulated discourse is an expression of power and rationality configuration (Jensen, 1997). Coherent documents and the texts are saturated with power and vested interests. This was also manifested in interviews and policy documents in empirical analysis. Hajer (1995) claims that coherence is dependent on the institutional structure. The discourse analysis adopted in this research goes beyond the linguistic part and includes the scalar politics determined by special institutional arrangements in China. The approach reveals the multi-level of power relations and the individual agents contribute specific elements to the final dominant discourses of polycentricity. The polycentric discourses are regarded as the outcome of discursive and material practices operating at various levels of state.

This approach goes even further to investigate the institutionalisation of new discourses. After identification of political and technical rationality, this research explains how the institutional powers shapes and are reshaped by the discursive practices. My research admits

the reciprocal relationship between institutionalisation practices and discursive practices and point out changes in concrete policy or institutional arrangement brought by new discourse. The following embedded cases in this thesis embrace this process and extend the discussion into the application of tools and spatial strategies in specific centres.

These characteristics suggest the more applicability of this approach to China's planning research in specific and the potential application to multi-level politics research in general. The analysis mainly focusing on linguist part is not easy to be carried out considering the concrete content and format of Chinese planning documents. Although few scholars have employed this approach to analyse environmental discourses in China, e.g. Xu (2016), there still lack the methodological precision. This research exemplified the concrete analysis in much more detail. Further work can be carried out using this discursive analytical approach surrounding other policy narratives in China.

The limitation of methodology should also be noted. This approach is a social constructionist approach, which recognises the subjectivity of researcher in the research process. In the research process, the analysis is subject to the selectivity just like the selectivity in the discursive formation process discussed in this research. On one hand, the debates on polycentricity in China's planning document is not as prominent as that in the western policies. The related discourses are relatively scattered spread and implicit in the documents. On the other hand, a great deal of information about positionings, negotiation and contestation of different levels of government need to be well integrated. I found it difficult to present so many details and make interpretations, but fortunately, the overall discourses and the dominant storylines are relatively clear because of significant political economic features of certain period. The selection process was also presented clearly in the analysis so that readers can follow my analysis and have their own critical understanding.

## 9.4 Policy implications

The findings of this research provide a critical and reflective thinking about polycentric development in China, which can inform the challenges and recommendations for policy and planning making.

First, the concern of the role of states in polycentric development has challenged polycentricity as a concept that can achieve economic, social, and environmental sustainability. Polycentricity has been regarded as a universal principle and one of few theoretical concepts that is suitable to be applied to spatial plans by Chinese planners. However, this research reveals that the discourses of polycentricity are essentially produced and reproduced by changing power relations and justified by planning profession. Polycentricity is used as an organising concept to articulate diverse interests and coordinate the political and technical rationalities. Therefore, it is necessary to challenge if polycentricity should be widely used in most China's cities without considering their specific social economic and political contexts. The overall benefit of polycentric development strategy for city and regions should be questioned and tested during implementation process. Indeed, Tianjin's case shows that over ambitious polycentric development has weakened its competitiveness and generated issues such as unstable development schemes, too dispersed new development, opportunity cost for large investment, and lack of urban vitality in new centres. During plan-making process, both monocentric and polycentric settlement structure should be considered in relation to its position within the wider urban and regional context. For less urbanised and developed cities and regions, it may be better to pursue agglomeration economies first with a concentration form rather than an unrealistic polycentric pattern.

Secondly, the empowerment of, and building partnerships with, local district governments are of great importance in delivering polycentric development. As shown in the empirical research, the polycentric development and the development of specific centres involve multiple governments. In China, central and municipal governments have stronger power than district and lower tier of governments. Selectivity and functional specialisation are features of polycentric development which will inevitably lead to conflicts of interests between them. Polycentric development should provide a positive-sum scenario instead of a zero-sum scenario for the city and regional development in the long run. Therefore, a reasonable benefit sharing system or an effective negotiation system is required. It also works for recent emergence of cross-boundary cooperation. The municipal government should pay more attention to balancing interests of lower level governments and reducing internal rivalry rather than just negotiating or bargaining with central state or other governments at the same level. Both vertical and horizontal cooperation should be reached to pursue polycentric spatial pattern.

Thirdly, there still exist risks in the Chinese approach to polycentric development. As illustrated in previous chapters, the risks are contained in two aspects. On one hand, the high growth rate seems difficult to be sustained since China has entered a 'New Normal' era. Tianjin, as well as some other cities have become exposed to problems such as a shrinking population and a slower economic growth. From the evolution of planning discourse and spatial pattern, many new centres are entirely newly planned, and their development heavily depends on an influx of population and capital investment. The creation of polycentricity may be becoming unsustainable and the maintenance of current polycentric pattern will become the priority in future. On the other hand, power domination in the polycentric development tends to lead to policy instability. Individual centres are often created and promoted by one generation of municipal leaders and their associated representatives in the central government aiming to achieve capital investment and economic growth in the short-term. A change of leadership at both the central and local government level can quickly shift the development focus away from half-finished centres and on to the next generation of leaders' new pet projects. Inaccurate projections for future developments and unrealistic aspirations of leading politicians result in lower efficiency of investment. An implementation framework involving evaluation, monitoring, and feedback in the long run is necessary to maintain the continuity and feasibility of polycentric planning.

Finally, the identity of polycentricity of Tianjin can only be achieved through a reproduction of morphological, functional, and political identities at the same time. According to van Houtum and Lagendijk (2001), there are three congruent interpretative dimensions of identity -strategic, cultural, and functional- that are interdependent and interactive in shaping the polycentric urban regions. For Tianjin, the cultural differences between different places are not as influential as between the cities or sub-regions in Europe. Plan making and materialisation process in China is politically charged to a large extent. This means that the polycentric city in spatial vision and urban reality are shaped more by development plans than by popular opinion. Too much attention has been attached to morphological and political identities. However, morphological polycentricity formed by expansion and new development will not certainly cause network economies. Functional coherent development is vital to support polycentricity at the urban and regional scales, but it is difficult to form without spontaneous mobility and communication in urban network. Lack of functional identity is likely to lead to the failure of polycentric development strategy, which is evidently

manifested in Yujiapu CBD, booming new towns and variegated development zones in Tianjin. To reproduce the functional identity of polycentricity, functional interaction between constituent centres need to be enhanced. The functional positioning of these centres should not be identical, and their functional image should be matched with the demands of firms and people. It requires that polycentric development should not just serve the Chinese states. The decision making and implementation of polycentric strategies need to involve non-governmental actors such as private companies and residents. Only in this way, can the effectiveness and feasibility of spatial plans on polycentric development be improved.

## 9.5 Future research agenda

This thesis investigated the discourses, governance, and spatial configurations of polycentricity in Tianjin. More specifically, it examined the changing discourses of polycentricity and their underlying meaning in four versions of master plans from an overall perspective. Then, embedded cases were selected to illustrate the implementation process of polycentric policy by investigating spatial logics, governance, and spatial changes in concrete centres. The data were drawn from documentation collected from field and public sources and interviews with relevant actors.

Progress has been made in better understanding the nature of polycentricity and Chinese approach to polycentric development. Through deconstructing the definition of polycentricity and building a new epistemology towards polycentricity, this research successfully bridges the political influences, professional knowledge, scales, contextuality, and urban reality together and the researcher's confusions originated from personal education and working experience have been successfully resolved by this research. It argues that the production and legitimation of distinct discourses of polycentricity is an articulation of multi-scalar power and therefor the states play crucial roles in this process. The detailed cases show that the planning rationality, governance mechanism, and spatial changes in specific centres are heterogenous, which reflects the complexity of polycentric development in contemporary China.

Based on the discussions in this research, future research agenda is built which includes new research questions raised during research process or further extension of research findings. During this research process, the political system and planning system in Tianjin and China

have been changing. Previous government departments responsible for different types of planning are gradually merged from municipal level to district level. More importantly, a territorial spatial plan has been under making and will substitute city master plan. The administrative and planning system adjustments have not completely finished when doing this research. In future, with the established a new system, more efforts may focus on how the concept of polycentricity is applied and implemented in new spatial plans at different scales. More research should be carried out to investigate the reshuffled power relations, new planning techniques and their influence on the plan making and implementation. Based on that the similarities and differences compared to previous planning system can be drawn.

The empirical analysis could be further extended to other centres in Tianjin, other cities and even can be upscaled to regional scale in future. The analytical framework in this research is process-based, context-based and scale reflective. It is suitable to be applied to any spatial scale, at which the concept of polycentricity has been applied. This research was conducted at the intra-city scale. In future, the framework could be applied to more complex territories, such as Beijing-Tianjin-Hebei region to investigate the discourses, governance, and spatial configurations at regional scale. City clusters and regions have become the most important spatial units for development and governance in China recently. Further research can shed lights on conflicts of interests, the formation of coalition and the negotiation process at regional scale through a processual and critical understanding like this research.

More broadly, this work also offers insights to urban and planning research in China and will provoke more research proposals beyond the topic of polycentricity. For example, research will be needed on institutional and organisational problems of planning system along with recent reform. Based on implications on policy and plan making in this research, solutions can be found in the aspects of transparency of decision-making process, public participation, and the relative independent role of planning professions. Future research could be directed towards how planners can improve their roles as professions and consultants; how public participation can be facilitated so that the ‘differential space’ can be included in policy agenda; and how the decision making progress and outcomes can be more accurately recorded and more easily accessible. Through addressing these questions, the research fields and approaches of urban and planning research in China can be greatly enriched.

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## Appendix 1 List of Interviewees

Categories	Organisations	Code
Tianjin Municipal Government	Tianjin Municipal Government Policy Research Office	G05TJ
	Tianjin Municipal Development and Reform Commission	G27TJ
	Tianjin Transportation Commission	G09TJ
	Tianjin Transportation Commission	G10TJ
	Tianjin Municipal Land Resources and Housing Administration Bureau	G11TJ
	Tianjin Municipal Urban-rural Development Commission	G03TJ
	Tianjin Municipal Urban-rural Development Commission	G07TJ
	Tianjin Municipal Urban Planning Bureau	G08TJ
	Tianjin Municipal Urban Planning Bureau	G12TJ
	Tianjin Municipal Urban Planning Bureau	G16TJ
	Tianjin Land Consolidation Centre	G20TJ
Tianjin Binhai New Area	TBNA Planning and Land Resources Administration Bureau	G06BH
	Tianjin Economic-Technological Development Area	G04BH
	Tianjin Economic-Technological Development Area	G13BH
	Yujiapu Central Business District Administrative Committee	G01BH
	Yujiapu Central Business District Administrative Committee	G02BH
Dongli District	Dongli Planning Bureau	G14DL
	Dongli Planning Bureau	G15DL
	Dongli Planning and Natural Resources Bureau	G23DL
	Dongli Planning and Natural Resources Bureau	G24DL
	Huaming High-Tech Zone	G28DL
Wuqing District	Wuqing Development and Reform Commission	G29WQ
	Wuqing Planning and Natural Resources Bureau	G22WQ
	Wuqing Development Area	G21WQ
	Jingbin Industrial Park	G18WQ
	Gaocun town	G19WQ

Nankai District	Nankai Development and Reform Commission	G17NK
Planners	Tianjin Academy of Urban planning and Design Binhai New Area Branch	P01
	Tianjin Academy of Urban planning and Design	P02
	Tianjin Academy of Urban planning and Design	P03
	Tianjin Academy of Urban planning and Design	P04
	China Academy of Urban Planning and Design	P05
Academics	Tianjin University	A02
	Tianjin University	A03
	Tianjin University	A05
	Nankai University	A01
	Tianjin Normal University	A04
Firms managers	Real estate companies: Country Garden	F01
	Real estate companies: China Fortune Land Development	F03
	Development corporations: Tianjin Capital Urbanisation Co., Ltd.	F04
	Development corporations: Tianjin Expressway Group Co., Ltd.	F05
	Planning consulting companies: ENVIROGENE	F02

Note: Planning and Natural Resources Bureau is newly established by the integration of Planning Bureau, Land Resources Bureau in the second fieldtrip due to the political and planning system reform in China.



## Appendix 2 Guiding Questions for Semi-structured Interviews

### Staffs from Tianjin Municipal Government:

1. What is your sense of definition of polycentricity and what are the main elements of it? when and where you first came across it?
2. When did Tianjin propose and put forward the polycentric development model? Has the connotation and meaning of 'polycentricity' changed? What are the goals of spatial development strategies during different periods respectively?
3. What are the reasons for changes of spatial development strategy? What is the main driving force, government or market forces? Is it the planned results by government or the spontaneous stage of urbanisation?
4. At present, which areas are the centres or key nodes in the conceived polycentric urban form in Tianjin? What are the criteria of the selection of these centres? What are the conceived relationships between these centres (physical linkage, functional division of labour, etc.)?
5. Under what specific historical background and policy background are these areas and nodes selected as the centres of Tianjin? What kind of development bases do they have when planning and policy recognise their central role? How are they mentioned in planning and policy?
6. In development reality, what features do the current spatial structure of Tianjin show? To what extent can Tianjin be regarded as a polycentric city? Whether some new (sub)centres have emerged in reality?
7. What measures have the government generally adopted to consolidate the development of these centres to achieve the polycentric spatial structure in the whole city-region? What influences did these measures generate?
8. Whether your department has any incentive to achieve polycentric urbanization, and what impacts will it have on your department (or region)? Are there any conflicts of interest with other departments? What is the role and duties of your department or district in Tianjin's polycentric spatial transformation?
9. Whose interests are served by polycentric development- developers, enterprises, public services, the public? Whether the polycentricity is benefit to or detrimental

for the development of the city? What problems and challenges emerged during the spatial change in Tianjin?

10. Will the spatial development strategy of Tianjin continue to emphasize the polycentricity? Which areas have more potential and will become the focus of future development?

### **Staffs from local government**

1. What is your sense of definition of polycentricism and what are the main elements of it? when and where you first came across it?
2. When did Tianjin propose and put forward the polycentric development model? Has the connotation and meaning of 'polycentricity' changed? What are the goals of spatial development strategies during different periods respectively?
3. Whose interests are served by polycentric development- developers, enterprises, public services, the public? Whether the polycentricity is benefit to or detrimental for the development of the city?
4. How has the role and function of your district evolved in the spatial development strategy of Tianjin? From the perspective of planning and policy, when were new centres formed in this area?
5. Under what specific historical background and policy background are these areas and nodes selected as the centres of Tianjin? Does local government play an active role in the process? Why?
6. What kind of development basis does your district have when planning and policy recognise their central role? How are they mentioned in planning and policy? What are the meanings of these concepts?
7. Why these places are planned as or developed into a centre in Tianjin? What are the distinct advantages of your locality compared to other areas in Tianjin?
8. What kinds of governance innovation and administrative apparatus has been set for the consolidation of centres? Do these changes facilitate the development? Are there any conflicts of interest with other departments at higher level? If so, how to coordinate?
9. What kinds of special arrangements or policies in economic development and infrastructure investment has been implemented by the municipal government and local government for the consolidation of centres? Do these changes facilitate

the development? Are there any conflicts of interest with other departments at higher level? If so, how to coordinate?

10. How has the demographic composition, economic structure and built environment of your area changed significantly? Are these changes beneficial to local development? Are these changes beneficial to the improvement of the quality of life?
11. What are the relationships between this place and other area in Tianjin? Is the relationship beneficial to the development of Tianjin?
12. What are the economic development goals and spatial layout strategy from the perspective of local government in near future? How does it align with the economic transformation and spatial strategy of Tianjin city region?

**Planners and academics:**

1. What is your sense of definition of polycentricism and what are the main elements of it? when and where you first came across it?
2. What is the origin and main reason the Chinese cities have taken on polycentric spatial structure in recent years? What is the rationale for the polycentric urban structure that is considered as an ideal and sustainable urban structure?
3. How is the polycentric development principle applied in Chinese urban planning? Is it a universal principle in planning? Is it influenced by western theory and practical experience?
4. In terms of urban and regional planning, is there something different and unique about polycentric development in planning and practice in China, compared to the West?
5. When did Tianjin propose and put forward the polycentric development model? Has the connotation and meaning of 'polycentricity' changed? What are the goals of spatial development strategies during different periods respectively?
6. The spatial development strategy of Tianjin's has experienced the transformation from monocentricity to polycentricity. What are the reasons for that? What is the main driving force, government or market forces? Is it the planned results by government or the spontaneous stage of urbanisation?

7. Whose interests are served by polycentric development- developers, enterprises, public services, the public? Whether the polycentricity is benefit to or detrimental for the development of the city?
8. At present, which areas are the centres or key nodes in the conceived polycentric urban form in Tianjin? What are the criteria of the selection of these centres? What are the conceived relationships between these centres (physical linkage, functional division of labour, etc.)?
9. Under what specific historical background and policy background are these areas and nodes selected as the centres of Tianjin? What kind of development bases do they have when planning and policy recognise their central role? How are they mentioned in planning and policy?
10. In urban reality, what features do the current spatial structure of Tianjin show? To what extent can Tianjin be regarded as a polycentric city? Whether some new (sub)centres have emerged in reality?
11. What role does the planning play in the formation of centres and polycentric transition? How can we ensure the successful implementation of the spatial development strategy in the planning?
12. Whether the polycentric strategy is successfully implemented and what problems and challenges emerged during the implementation of planning?
13. Does the current planning system need further improvement to achieve polycentric urban structure?
14. Will the spatial development strategy of Tianjin continue to emphasize the polycentricity? Which areas have more potential and will become the focus of future development?

**Firms:**

1. Can you provide your institution's basic information (type, establishment time, operating conditions, geographical distribution, etc.)?
2. In recent years or in the next few years, what kind of development strategy will your organization have in Tianjin? What are the reasons for new strategy?
3. What is the relationship between your institution and the state? What role does the government play in your decision-making process, such as financial incentives, land supply, etc.?

4. Have you heard of the idea of polycentricity? What is your sense of definition of polycentricism and what are the main elements of it? What does it mean to you?
5. Does your organization agree that the spatial structure of Tianjin has gradually present a polycentric model? Do you agree that there are multiple urban centres in Tianjin? Why?
6. What factors will affect your identity of polycentricity? For example, government propaganda, planning policy, landmark building, or economic and social development level?
7. What changes have taken place in your location in recent years (transportation infrastructure, urban construction level, land rent price)? Why and How did these changes affect you?
8. Do you think the urban spatial structure of Tianjin will affect your institution's performance? What benefits or drawbacks that brings to your organisation?
9. What is your organization's contribution to the urban spatial structure change in Tianjin and to the local economic and social development?
10. Would you like Tianjin develop into a polycentric city in future? Whose interests are served by polycentric development of Tianjin, developers, enterprises, public services, the public? Whether the polycentricity is benefit to or detrimental for the development of the city?