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Urban Transition Dynamics in the Regional Rescaling of the Pearl River Delta Area: a Qualitative Approach

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ABSTRACT

The Pearl River Delta region has been the hub of urban vibrancy and boom ever since the country's opening up and devolution reforms. However, the political and economic institutions of the cities in this region are so different and complicated that they pose great challenges to the integration of the whole region. This study takes one prominent experiment of urban expansion, Hengqin in Zhuhai, as a case study to investigate how institutional innovations are forged and managed to boost urban development and transitions towards sustainable growth and regional integration. We adopt a multi-level perspective framework to analyze Hengqin's urban transition. Government archives, master plans, various documents and interviews with government officials, planners, residents, and businesses from Zhuhai, Hong Kong, and Macau are chosen as sources of the analysis, which delineates the complex interactions from a variety of stakeholders. Despite difficulties in the early days, Hengqin is now transitioning quickly, although still confronted with inter-scalar challenges. A better understanding of the governance and economic innovations that have taken place, and the investment-driven development strategies involved, will help shed light on the urban transition of other similar city regions.

1. Introduction

China has been undergoing a tremendous urban transition in recent decades, shifting from its industrialization-driven course to an emerging outlook of industrial upgrading and governance transformation. Such dynamics have been strengthened by the recent national agenda for urban rescaling, culminating in the central government's promulgation of the Greater Guangdong-Hong Kong-Macau Bay Area Initiative (termed Greater Bay Area here) at the beginning of 2017. The initiative largely over-

laps with the Pearl River Delta region, which is one of the most well-developed and integrated metropolitan areas in China. Given the peculiar providence of the vicissitudes in China's contemporary history, although split by multiple disparate institutions, this region still has an economy in which 11 cities are largely mutually complementary. The region's opening up policies date back to the Qing Dynasty, germinating a more autonomous economic atmosphere. In like vein, a more laissez-faire attitude is adopted by the government to the social and economic development in this region. Taking such traditions as an advantageous starting

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point, the central government has been identifying this region as an excellent institutional reform laboratory for future transitions.

In effect, the Bay Area has successfully completed the first round of urban transition since China's 1978 opening up and reform policies. At the very beginning of the 1990s, special economic zones (SEZ) were established to boost marketization reforms by offering privileged economic instruments and greater discretion to local governments^[1]. Shenzhen and Zhuhai are the epitome of such transitions, with a rapidly expanding economy and booming urban systems. This transition continued into the new millennium when the neo-liberal development ideology has been thwarted by pressing environmental and social concerns. For the same reason, the central government selected several cities in this region for pilot experiments in the sustainable transition of urban development^[2]. For instance, Shenzhen and Zhuhai (or areas within the city) has been chosen as pilot cases for both national low-carbon city schemes and eco-city schemes^[3]. The on-going transition has been smooth, since the leading cities in the Bay Area have been swiftly upgrading and transferring their old industries to other regions.

Most recently, such dynamics have been complicated by the national agenda of 'urban recalling', an initiative to coordinate the urban development of adjacent cities in one metropolitan area. The Bay Area is characterized as a region with great political and institutional diversity, with two special administrations, one provincial and two sub-provincial level municipalities clustering in the compact area, and hence the call for urban rescaling is urgent. On the other hand, it has a ladder-like economic landscape in which different cities are designated with different, largely non-contradictory roles. Capital, human resources, and institutional innovations flow (or spillover) from the center cities to outskirts cities. Thus, the urban rescaling and integration of city groups in the Greater Bay Area is more feasible and workable compared with China's other city regions. However, the urban transition progress of the cities is considerably influenced by cross-scale dynamics and inter-scalar factors. Therefore, urban transition – aimed at simultaneous sustainable growth, governance transition, and regional integration - has to be examined through the lens of inter-scalar contexts.

This paper maps the urban transition pathways for sustainable growth and regional integration by probing into the particular case of Hengqin, Zhuhai. Against the backdrop of urban rescaling, it deliberates on how niche (innovations in urban institutions) management steers Hengqin toward an emerging goal of sustainable growth, as well as discussing the pitfalls, challenges, and territorial dilem-

mas that may occur in the course of transition. Section 2 provides a comprehensive review of the literature relating to transition theory, transition pathways, and the dynamics of inter-scalar forces, from which a theoretical framework is developed to facilitate the later analysis. The research methods are introduced in section 3, and section 4 provides a detailed delineation of the social, economic, and institutional innovations involved and how they interact in the transition process. The final section contains reflections, conclusions, and the limitations of the research.

2. Transition Theory, Multi-level Perspective and Cross-scale Dynamics

2.1 Theory of Transition

Transition theory has been widely adopted in the research fields of management, technological innovation, policy and institutional innovations, and governance^[4]. It is generally concerned with system transfers from one "dynamic state of equilibrium" to another^[5]. For instance, there is a string of researchers investigating how government and industries changed the energy systems of a particular locality by properly designed regulations and mechanisms^[6]. Similar efforts have been made in the study of water management, food management, and even the transition of companies^[7-9]. However, studies of the transition of urban governance and urban development strategies are the most relevant. For example,^[10-12] have investigated transition in the economic strategies of cities, while Smink, Hekkert, & Negro (2015) focus on the reforms made in urban development strategies to achieve urban sustainability goals. However, very few studies have analyzed the transition in urban experiments in China, or explained the process through urban enclave building^[13-14]. Although the transitions occur in different realms, they all follow certain patterns. A transition curve adopted from general transition theory is also adopted in our study, which shows the possible transition patterns of a system, with general transition curves modified to fit into the development patterns of urban systems (Figure 1).

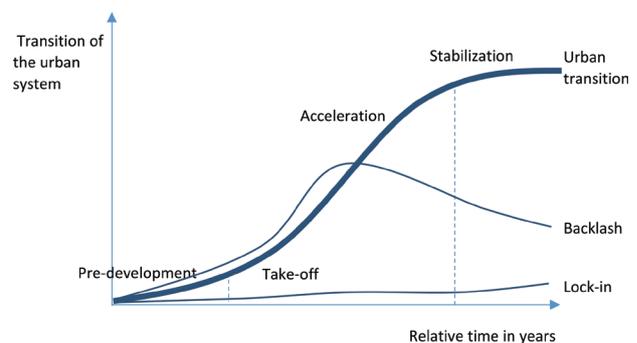


Figure 1. Transition patterns of urban systems (source: the author)

The bold S-curve indicates an “ideal” urban system transition. At the pre-development stage, while there are background changes in the systems, the overall “dynamic state of equilibrium” remains, and changes in transition are invisible^[15]; the time of take-off precedes the acceleration phase, during which the ignition of transition and structural changes become visible, and momentum is gained thereafter^[16]; and in the stabilization stage, the structural changes are almost finished and a new “dynamic state of equilibrium” of the urban system has been formed. However, alternative pathways are possible. Ingrained behaviors, institutions, and insufficient government and market support may lead to an urban transition lock-in, which is a common feature of China’s massive and rapid urbanization process^[17]. The lack of constant support and institutional change may also lead to a backlash in the urban transition^[18]. Such model cities in the Greater Bay Area as Shenzhen and Zhuhai have gone through a successful urban transition from industrialization (mainly manufacturing industries) to an upgraded industry with a more comprehensive urban institutions, but this is far from being the common practice of all cities in China^[19]. The transition theory framework offers a new perspective by regarding the urban development of the Bay Area as a dynamic process with clear trajectories and patterns, but no studies yet have examined China’s (successive rounds of) urban development in this way.

2.2 Transition Frameworks and Multi-level Perspective Analysis

The broad theory of transition has resulted in the development of several frameworks to facilitate various fields of research, and the transition process has been the focus of many studies with various goals, narratives, explanatory styles, and distinctive methodologies. In general, these studies can be loosely classified into three categories: quantitative system modeling, socio-technical transition analysis, and initiative-based learning^[20]. Quantitative system modeling approaches (e.g. complex systems, system dynamics, and integrated assessment) mainly take the transition pathways as different scenarios that can be modified by techno, social, economic, and governmental factors and can offer projections, rather than predictions for sustainability transition^[21]. Socio-technical transition analysis approaches regard sustainability transition as a multiple-level process involving institutional, social and technological realignment and reconfiguration^[5]. This category of approaches is mostly employed in the study of sustainability transitions. However, initiative-based learning is more loosely organized, placing emphasis on The long-term vision and expectations of different stakeholders in the reconfiguration process^[22].

Socio-technical transition analysis includes a string of such frameworks as the Multi-level Perspective (MLP), Strategic Niche Management, Transition Management, Innovation Systems, Techno-economic Paradigm, and Socio-metabolic transitions approaches constructed upon similar notions^[23]. “Socio-technical systems”, consisting of actor-networks, professional knowledge, and other material artifacts, serve as the context and arena of transition. A “socio-technical transition” is a fundamental shift in socio-technical systems, penetrating into all social, political, social, economic, and cultural dimensions. Such a transition usually starts from a “niche”, where such innovations as emerging technologies, for instance, can develop without intervention from current socio-technical regimes^[24].

Socio-technical transition analysis has many advantages in the study of transition, especially in the transition of urban systems. It mainly focuses on the mesoscale, which matches our case study of Zhuhai. The in-depth analysis of landscape-regime-niche interactions illustrates the dynamics involved and explains transition pathways and trajectories in detail. It also clearly depicts the process of system realignment and reconfiguration, with an explanation of the changing roles and interacting networks of actors. The focus on governance and policy dimensions also generates implications for future sustainability transition pathways^[20]. Although it has been criticized as mainly descriptive and qualitative, it complements our quantitative synergistic models by adding detailed narratives to transition. Moreover, as demonstrated in Figure 2, it clearly explains the three-level dynamics in the transition process.

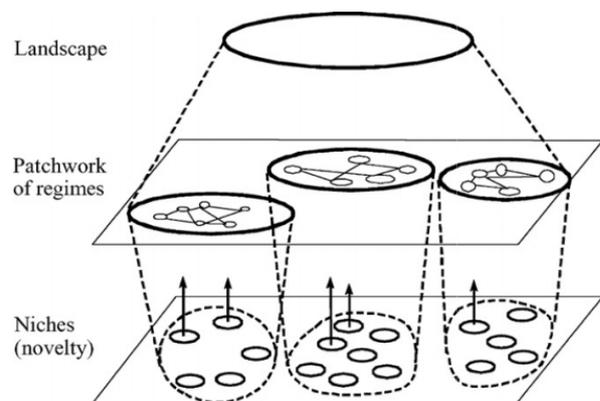


Figure 2. Illustration of MLP analysis^[25]

In the MLP framework, the “windows of opportunity” occur when the cross-level dynamics are mutually fortifying in a continuous time span^[26]. Changes might be technological innovations, institutional reforms, or new practices, and they can be considered as niches. When protected from interference by current regime patterns, their development will gradually destabilize contemporary

regimes and steer the system to new regime types^[27]. Landscape factors may press the regime and niche development into a particular course^[28]. Multiple transition pathways have been identified in transition studies in various fields. A reproduction pathway pattern, which signifies transition failure, might occur when landscape pressure is too weak to urge changes in regime types, with niche development also being too slow to affect its stability^[29]. Nonetheless, even if the transition is successfully accomplished, there are still nuances in the process; it may take either one or more of the paths of “transformation, realignment, reconfiguration, or technological substitution”, according to the different interaction patterns of the pressing landscape factors and the development of niches^[30-31]. The MLP framework serves as a suitable gauge for examining past and contemporary urban transformations by providing a bird’s eye view of the dynamics involved, while drawing the urban transition pathways. It is a powerful framework, with advantages in both scale and generalizability^[32]. China’s urban transitions in recent decades have been so dramatic that its dynamics and pathway patterns have yet to be fully expounded, let alone the most recent tide of urban reforms and rescaling that have occurred in the Greater Bay Area.

2.3 Inter-scalar Dynamics in Urban Rescaling

To date, the Pearl River Delta region is the most well-integrated city region in China^[33]. The urban transition of one city is closely related to other cities in the same region. In addition, the different political status of cities in the Chinese context, and the “one country two systems” institution in Hong Kong and Macau, increase the inter-scalar dynamics^[34-35]. Most projects involve stakeholders from different levels and the influences from the central, provincial, and Hong Kong/Macau government substantially remold the transition strategies and pathways of the region’s cities^[36-37]. Both top-down imposition and bottom-up motivations intertwine simultaneously in the urban integration of this region^[38]. This poses greater landscape pressures on local regimes and increases the uncertainties of niche management in one locality. The Greater Bay Area Initiative is promulgated under such circumstances, targeting cooperation and integration across many boundaries. There have been some studies into both the transition pathways and the inter-scalar dynamics of urban development, yet few contextualize the transition in the rescaling agenda^[19]. Research into the Greater Bay Area Initiative in particular is almost absent.

3. Methodology: Case Study of Hengqin

Hengqin is an island in Zhuhai, separated from Macau by

a very narrow water channel (Figure 3). It used to be two islands (the Big Hengqin Island and the Small Hengqin Island) until the water was drained after dikes were built in the 1970s. Its current size is 87.09 km² - almost three times larger than Macau - yet it was populated by only 9400 people at the end of 2016, much less dense than Macau and the other regions of Zhuhai (Zhuhai Statistical Bureau, 2017).



Figure 3. The location of Hengqin (source: the author)

Hengqin serves as an exemplary case to investigate the urban transition process of the Greater Bay Area. First, Zhuhai has been listed as one of China’s four SEZs from the beginning of the 1990s and can therefore be considered as a subsequent enclave of urban reforms and transition. Although outshone by Shenzhen on the other bank of the Pearl River, it is still widely considered to be one of the most successful epitomes of urban reforms and transition in the last two decades^[35]. The urban system in Zhuhai, particularly the political and social institutions involved, was created as a niche segregated from the old planned and managerial institutions in China. The city has gained a lot of experience in niche management in its change to a more market-driven economy, entrepreneurial governance, and livable urban environment. Responding to emerging urgent pressures from landscape factors, such as the call for sustainable/low-carbon growth and reforms in the market and political institutions, the central government has intentionally treated the city as a new enclave for sustainable growth and regional integration. It is a perfect target for MLP analysis, to illustrate the building and management of a niche space throughout the transition process.

Second, Zhuhai is less prominent than other leading cities in the Greater Bay Area, and is thus much more

likely to be influenced by inter-scalar dynamics. It is the flagship cities and urban development projects, with stable and constant political support, that usually attract capital, professionals, and other kinds of resources in the region. Their municipalities are also allowed greater discretion and are subject to less interference from inter-scalar players, whose urban transition pathway and trajectory is therefore less representative than more ordinary cities. As a result, Hengqin in Zhuhai is a typical case representing the urban transition pathways in China, as it is unique in niche management while also being subject to inter-scalar dynamics. Moreover, Hengqin is at the frontier of cross-boundary cooperation between Guangdong, Hong Kong, and Macau. It is a typical reflection of the urban experiment for regional integration, being not only an attempt by the Chinese government to continue the reforms of its political and economic institutions, but also providing an opportunity for Macau to realize continued growth regarding the extremely limited space for development.

To depict the urban transition patterns and explain the underpinning dynamics involved, we took a broad and comprehensive review of various government documents, statistical yearbooks, memoranda, news reports, and other secondary literature. To analyze the process of niche management and the influence of inter-scalar factors, we also conducted 17 interviews with local officials, planning professionals, local companies, and other experts from Zhuhai, Macau, and Hong Kong. The data collected and their themes are summarized in Table 1. The information was organized into a multi-level perspective framework to draw a panoramic view of the urban transition dynamics. We also discuss the challenges, traps, and dilemmas in Hengqin’s transition scenarios.

Table 1. Sources and themes of the collected data (source: the author)

Types	Sources	Themes
Interview	Local officials in Hengqin, Zhuhai, Macau, and Hong Kong	Aims of urban transition from various parties; the expectations and prospects of the urban project; interaction dynamics; niche management models; development strategies; outside pressures
	Local enterprises and professionals	Dynamics between the institutional innovations (niche) and other participants; interactions within the regime patterns; other social, technical, and economic factors (landscape pressures); sustainable growth; efficient services and smart governance (transition goal)
	Local community members	Prospect of the urban transition; social services; social activities; local services, etc.

Document & archive	Regulations and laws regarding all aspects in Hengqin	Niche creation and management of institutional innovations; the written rules for the interactions between various players from different scales
	Statistical year-book, government, industrial, and public reports	Transition dynamics, outcomes, and patterns; economic, social, and other indicators to evaluate the transition process
	News reports and other second-hand literature	Transition dynamics, outcomes, and patterns; interaction between different stakeholders; influences from laws, regulations, and institutional innovations
	Planning documents at different levels, initiatives	Urban rescaling dynamics; urban goals of different cities in the region; the interaction across the boundaries of cities; planning and development strategies and details

4. A Niche within a Niche: Hengqin in Zhuhai

As mentioned above, Zhuhai was established as one of China’s four earliest SEZs at the beginning of the 1980s, and has been successfully transformed from a centrally-planned economy with administrative governance into a basically market-driven economy with an entrepreneurial government. Its urban transition process has been deemed as a model in China. However, environmental concerns and increasing economic and social needs entail an upgrading of its industry and governance models. The upsurge of sustainable urbanism and eco-civilization (as they are termed in the national development agenda) also requires urban growth to rely less on resource consumption and place greater emphasis on the ecological preservation. Moreover, the continuous marketization reforms have demanded more brave, yet prudent, actions in the financial systems that have progressed little to date due to government reluctance. The Hengqin New District was endowed with an expectation that has not yet been fulfilled, preceding a new urban transition for sustainable urban growth with a market-driven economy. Considering Zhuhai SEZ as a niche leading the urban boom, Hengqin, in parallel, will be a niche within the niche that aims even higher.

4.1 Creation and Management of the Niche

Since the establishment of Zhuhai SEZ, Hengqin Island has been designated a prosperous vision. It was listed as one of Guangdong Province’s key development zones in 1992. Visionary documents, a development agenda, and even plans had been issued by the local government, yet compared with the reforms and development in other key cities, nothing was taken onto the ground in Hengqin. Rather than creating an institutional niche with its own

operation rules, the development vision was soon set aside and its development momentum faded away. It was not until 1997, when the Zhuhai municipality, envisioning the potential tourism value of its neighbor Macau, started to consider the role of the island as a tourism zone. This plan also withered away, however, as the focus of the municipality and the capitals moved to other regions. In 2005, the municipality again moved toward a deeper integration with Macau and the expansion of Zhuhai's urban areas, changing the island into an economic cooperation zone with Macau. Throughout the subsequent 12 years, several attempts have been made to remold the visage of Hengqin Island, but none have succeeded in creating an institutional niche that lasts long, and the local authority has failed to manage the transformation of the urban landscape. The broader policy and practice discourses have been shifting from attracting foreign direct investment and manufacturing industry in the first half of the 1990s, to sustainable/green urbanism in the second half, and finally to regional integration in the 2000s. Efforts have been made to respond to all these changes in the landscape factors, yet, as indicated in Figure 4, all institutional innovations failed. As a result, institutional innovations soon lost momentum and grounded to a halt. As commented by a deputy director of the Land, Planning and Construction Department of the Hengqin Administration Committee:

"I have been working in Hengqin since the very start, and I have seen the three ups and downs of this island. There was much confusion in the positioning and orientation of this island before the decision was finally made by the central government in 2009. It was a very firm endorsement and, from then on, the development strategy was quite clear and the current institutions in Hengqin were gradually consolidated. For instance, land ownership was quite complicated on the island and, in order to facilitate comprehensive planning, we redeemed the landowners at around 3000 RMB/m², which was extraordinarily high then. With such a great investment, we know that this time it's for real."

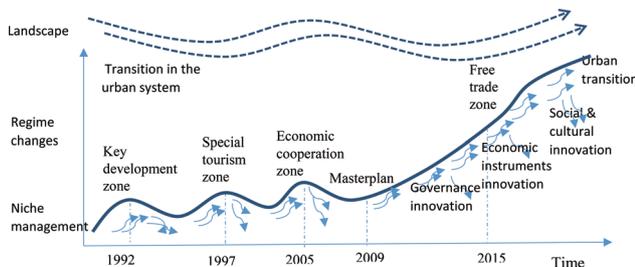


Figure 4. Hengqin's urban transition trajectory and niche development (source: the author)

Since the island's land ownership is so complicated -

being dispersed into the hands of local villagers, foreign investors, state-owned-enterprises (SOEs), and foreign companies - the costs of land acquisition are enormous. It is beyond the capacity of the newly established Administration Committee (the governing body) to bear such a gargantuan financial burden, and hence is paid by the municipality regardless of the potential risk of losses. It is against such a backdrop that a niche was built, operating very differently from Zhuhai SEZ.

4.1.1 Governance Innovation

As commented by an official from the Development and Reform Bureau of the Hengqin Administration Committee:

"We had a totally different administration structure to other districts in Zhuhai. We can issue orders and permissions mostly on our own, and we have the super departments to boost administrative efficiency. Our 11 departments coordinate with almost 30 bureaux at the municipal level."

The "super department reforms" did enable the local administration to act more effectively and efficiently by combining the power of similar departments. Moreover, the Hengqin New District Regulations of Zhuhai SEZ (the Hengqin Regulations came later), which is the legal document defining the institutional structures of Hengqin New District, has conferred greater discretion to the local administration. Unlike all the other districts in Zhuhai, most daily social or economic permissions are issued within the New District rather than the municipality. With a sub-prefectural status later recognized by the State Council, its administrative power exceeds that of the municipal and even provincial government in some aspects. It enjoys more discretion in issuing regulations and approving applications. This became particularly true after the establishment of Hengqin's 2015 Pilot Free Trade Zone (PFTZ), whose legally entrenched status and endorsement from the central government prevents interference from governance institutions and other external factors.

The heavy investment in land acquisition has also paid off to some extent. As a planning expert said, "Hengqin was virgin land and a blank sheet when the masterplans were made". It is much easier for the government to make a comprehensive and long-term plan without concerning the complicated land ownership that exists in other places. In addition, the newly emerged department combining national land, urban planning, and construction authorities significantly reduces the conflicts between multiple plans. The masterplan, land use plan, and social & economic development plan, which were subject to the jurisdiction of different departments, are now highly coordinated, elim-

inating many obstacles in Hengqin’s urban development. The departments in the Administration Committee are more horizontally connected with each other than vertically linked to the municipality. In effect, according to the Hengqin Regulations, the municipality is excluded from the daily operation of the New District. As explained by the director of the Hengqin Administration Committee:

“We designed the institutional structure of three committees so that the operation of the New District is largely independent, yet at the same time linked with the higher-level authorities and encompassing a group of stakeholders as large as possible.”

In effect, it has an institutional innovation in the governing structure that has not been experienced by most common cities in China. The daily operation is almost entirely conducted by the Administration Committee and, unless otherwise clearly stated, the regulations of the municipal and provincial government usually do not apply to the New District. A Development and Strategy-making Committee (DSC) was established, consisting of the leaders of the municipality and the New District, which can only make strategic decisions over Hengqin’s development. The Administration Committee is responsible for the DSC and reports to the latter regularly. A Development and Advisory Committee (DAC) is also created to collect opinions for the administration. It is stipulated in the regulations that the majority of the DAC members should be representatives of Macau, ensuring the interests of Macau are incorporated into the New District. The Administration Committee also reports regularly to the DAC on the development plans, strategies, and progress so that Hengqin New District’s development does not distract from the aim of regional integration and Guangdong-Macau cooperation.

4.1.2 Economic Instrument Innovation

Since its founding, Hengqin New District has enjoyed all the economic privileges of Zhuhai SEZ, and its economic instrument innovations further expanded when it was included as one of Guangdong’s three 2015 PFTZs. These innovations, summarized in Table 2, are based on the niche of governance innovation, so that preferential policies can be carried out smoothly. To realize sustainable and green growth, the Administration Committee deliberately established a high threshold for the industries in the New District. It selected seven industries: tourism, commerce, financial services, R&D, cultural innovations, traditional medicine, and hi-tech industries, offering them the preferential policies listed in Table 2. Resource intensive industries are forbidden in the New District.

Table 2. Hengqin’s economic instrument innovations (source: Zhuhai Municipal Government)

Types	Policies	Core information
General Policies	Innovations in customs clearance	Separate processing of people and cargos; fast processing track policies
	Preferential tax for companies	Tax exemption for exchange on the island; 15% corporate income tax for eligible companies
	Tax subsidies for Hong Kong and Macau residents	15% personal income tax for Hong Kong and Macau residents
	Preferential policies for the Guangdong-Macau Industrial Park	Support for particular industries; specially designed threshold for Macau companies
Specific Policies	Private equity policies	Tax exemption for the first two years; 60% tax return for the following 3 years
	Commercial registration	Separation of registration and operation; annual report system, etc.
	Headquarter policies	15% corporate income tax; tax returns; housing subsidies; other preferential policies
	Negative-list management	Documentation, rather than permission for non-listed investments

The leverage in economic instruments substantially facilitated Hengqin’s economic boom. Figure 5 illustrates the fixed investment, GDP growth, and revenue income since the founding of Hengqin New District, clearly showing that Hengqin’s economic growth relies heavily on fixed investment, which far outweighs its GDP. This is reasonable, since the New District has been established for less than 10 years. It should be noted that the growth rates of all the three indicators are very high, being over 50% annually. To date, the economic instruments have been fueling the rapidly expanding economy; the institutional and economic innovations are mutually reinforcing to promote Hengqin’s urban transition; while the niche management also sustains the development of the niche itself. Taking the prohibition-list management as an example, the restricted items have reduced from 110 to 85 in 2014 to 2015 respectively.

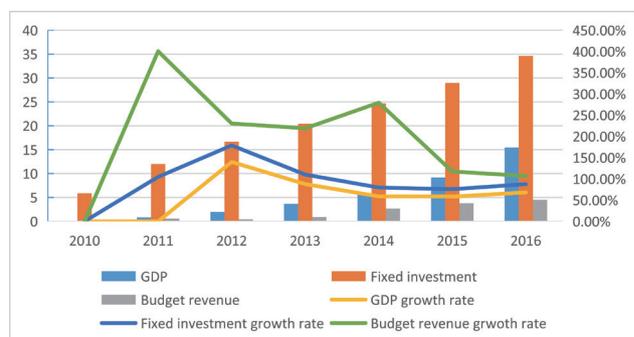


Figure 5. Basic facts of the economic development of Hengqin New District (source: Zhuhai Municipal Government)

4.1.3 Social & Cultural Innovations

As the underpinning factors of an urban system, the social and cultural elements of urban space usually take much longer to be reshaped. As the New District was still at an early age of urban transition, the social and cultural transitions were still in their infancy and rather inconspicuous, if not unsatisfactory. Attempts have been made to reshape Hengqin's social and cultural landscape by introducing tourist, educational, and other cultural resources into the New District, by introducing the Changlong Amusement Park and Macau University for instance; while the Administration Committee invested heavily in cultural, educational, and other social resources. However, it is difficult to argue that the niche of social and cultural innovations has been created to reinforce other niches in the process of urban transition. Moreover, this may pose great challenges in Hengqin's niche management and urban transition (deliberated in the following section). It can be argued that, although the innovations in the institutional niche and economic niche are pushing forward Hengqin's urban transition, their contemporary interaction with social and cultural aspects is still very weak.

4.2 A Territorial Trap? Contextualize the Challenges of Niche Management and Transition Pathways in Cross-scale Dynamics

As has been introduced in Section 2, the urban transition patterns are diverse, and under some circumstances, the transition may fail due to unsuccessful niche management or pressures from landscape factors. Hengqin's transition trajectory echoes general transition theory. The three vicissitudes in Hengqin's history imply that the changing landscape factors (e.g., the alternating discourses of industrialization, sustainable/green urbanization, and urban rescaling in the national agenda) actually impeded the development of the institutional niche, disturbing its urban transition pathways. It is equally important to realize that it was only since its development was raised to the national level that the institutional niche ceased to be countered by capricious landscape factors - a common dilemma in the urban transition of China's second or third-tier cities. Unlike flagship projects and first-tier cities, their institutional innovations are often ephemeral, and the newly created niche will collapse without constant and determined political support. The institutional hierarchy is so complicated in the Greater Bay Area that, even though

Hengqin is already a SEZ and PFTZ, it is still confronted with fierce competition from Hong Kong, Shenzhen, and Guangzhou. As commented by a Macau expert, echoing a local Hengqin government official:

"I am not that confident in the financial sectors of Hengqin. The financial sector in Macau is far from comparable to that of Hong Kong and Shenzhen. How can you have so many financial centers in such a compact Bay Area? ... as I told you, we have many preferential policy guidelines endorsed by the central government, yet the implementation details are always ground out slowly, at least much slower than in the Qianhai and Shanghai PFTZs."

The overlap in development goals poses a great challenge to the transition of urban rescaling in the Greater Bay Area, particularly for the rank-and-file cities. These cities may become victims of inter-scalar dynamics whose transition trajectory might easily be influenced by other players on different levels. Moreover, the management of institutional transitions is still overly dominated by the government, and relies overwhelmingly on investment. Even though there have been many innovations in Hengqin's governance, the urban development model is largely the same. All the land in Hengqin is owned by the Zhuhai Da Hengqin Company, an SOE in turn wholly owned by the Administration Committee, which acts as a financing platform for the local authority. Fixed investment in Hengqin actually accounts for over 90% of that of Xiangzhou (a larger district that includes Hengqin Island). Although less prominent than Shenzhen and Hong Kong, Hengqin still enjoys many privileges that are unimaginable in other cities. The situation in Hengqin is unique, with a territorial trap whose transition experience is unlikely to occur elsewhere. It also highlights that, in the Chinese context, constant and determined government support is the very basis for the niche management and urban transition of most cities, without which the transition pathways might be easily disturbed by landscape factors.

There are more challenges to be addressed regarding the social, cultural, and educational management in the transition process. Urban transition requires the transformation of previous social and cultural patterns. Nonetheless, the reshaping of Hengqin's socio-cultural regimes is still at a very early stage in terms of Guangdong-Macau integration. One aspect of its future goals is to be the R&D center, bringing in the education resources of Macau as represented by the operation of the Hengqin Campus of Macau University (on the left of Figure 6). However, the university is an enclave of Macau and has been entirely separated from other parts of the island. It is difficult to know the to which extent, if any, the innovations to date

has changed socio-cultural regimes, or Hengqin's overall urban landscape patterns. In addition, the New District is planned to accommodate a cross-boundary cohort of personnel, especially for Macau and Hong Kong residents. One representative measure is to allow Macau license-plate cars to travel freely on the island, yet the final policy contains so many restrictions that only less than 400 are eligible. Although such other measures as creating the San Jiang Human Resources Company facilitate the import of human resources, much more needs to be done to integrate across scales. In addition, Hengqin's other social and civic organizations are still immature, and therefore the transition management of socio-cultural innovations will be a crucial and urgent task for the city's urban transition and development strategies in future years.



Figure 6. Macau University (left) and Hengqin Port (right) (source: the author)

7. Conclusion

This paper introduces a transition perspective to urban development in China. Zhuhai SEZ, an institutional niche designed for the industrialization and marketization transitions of the 1980s and 1990s, started a new urban experiment in Hengqin aiming at the sustainable growth and urban integration of the Greater Bay Area. Weathered by a series of false starts throughout the 1990s, Hengqin finally managed to develop institutional niches for urban transitions with the constant and determined support of the central government. It entrenched governance innovations by legitimizing the institution in local laws and regulations. The creation of an Administration Committee,

the super-department arrangement, and duty separations between the three committees facilitated the local authority's niche management by increasing its autonomy and efficiency. The privileges created by SEZ policies in the new district, together with the preferential economic innovations of PFTZ, reinforced the interactions between the niche of governance innovations and economic innovations to fuel the transition.

However, governance and economic innovations have exerted little influence on the social and cultural aspects of Hengqin's urban systems to date. It is questionable whether its largely investment-driven development strategies could provide lessons for other Bay Area cities on different scales. Contextualizing the New District in the urban rescaling of the Greater Bay Area and Guangdong-Macau, suggests that the transition is still at the burgeoning stage, particularly in its social and cultural aspects. Thus, we call for research into urban transition dynamics on different scales and a future retrospective studies to provide a bird's eye views of the current transition process.

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