

SCALAR POLITICS AND THE PLANNING OF HIGH-SPEED RAIL STATIONS IN WUHAN, CHINA

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Abstract

High-speed rail (HSR) stations are nodes and places that involve multi-sector and multi-scalar decision-making in their planning and development. Nevertheless, the current literature has focused much on the inter-sector interplays but is lopsided by a lack of understanding of the multi-scalar interactions. It leaves several theoretical gaps in the study of scalar politics and empirical gaps in interrogating how scalar politics have unfolded around HSR station planning and development. A scale-sensitive analytical framework and empirical evidence are needed to develop a ‘balanced theorisation’ of the interlocking relationships between HSR station area planning, development and the scalar structure as well as the inter-scalar interactions.

This research seeks to address the theoretical and empirical research gaps by exploring the multi-scalar decision-making in the planning and development of HSR stations in China, where the relationships between multilevel governments have been transformed profoundly and the HSR network has been built rapidly. The thesis uses a scale-sensitive framework to investigate inter-scalar interactions among multilevel governments and authorities, especially concerning the strategies and policies crossing the rigid and inherited territorial scale of governments. Three inter-related questions are in focus: (a) what kinds of institutional/policy settings are responsible for the complicated relationships alternating between confliction and cooperation among the various stakeholders in decision-making associated with HSR station planning and development? (b) how do stakeholders manage their resources, opportunities, and interests for cooperation with and competition against each other in the multi-scalar setting? (c) what planning outcomes are observed, and to what extent have the inter-scalar interactions impacted the existing scalar structure?

The research is conducted in the context of metropolitan Wuhan, where rapid changes in the urban built-up area, metropolitan boundary, government jurisdictions and responsibilities are prominent. Three HSR stations in Wuhan are used as case studies to probe into the decision-making processes. Conceptually, the research draws on insights from the existing literature about HSR planning, multi-level governance and scalar theories in planning, including indigenous Chinese governance concepts to which many Western ideas about scale are applied. The analyses focused on both primary and secondary information, including face-to-face interview data gathered from key informants selected from multilevel governments, planning institutions, universities, and the private sector, field reconnaissance data (observation notes

and field photographs), planning and policy documents, minutes of meetings, maps, published works, and press articles.

The research findings reveal that the planning and development of the three case study HSR stations are products of scalar politics centred on Wuhan. The scalar structure does not only define the scalar division of resources, responsibilities and power among multi-scalar actors but also raises different expectations towards the station projects. Multi-scalar actors deploy different strategies (competition, cooperation, or inactions) to effectively manipulate the discursive and material dimensions of scale in pursuit of their place-dependent interests. The interactions and inactions between them finally lead to the planning and development outcomes (i.e., site selection, land use planning and transport connections). The fast-evolving nature of the scalar structure in the HSR planning regime results in both inter-scalar tensions and cooperation opportunities between stakeholders in the multi-scalar context. Not only the tensions but also the shared interests between them can lead to inter-scalar interactions, which shape the planning and development outcome and further trigger scalar restructuring. Unlike the intensive interplay that unfolded between multi-scalar governments in site selection where overlaps of institutional responsibilities exist, the governments chose not to engage with each other in the integrated development proposal but cooperated in intraurban transport connections. The out-of-date institutions, or the lack thereof, combined with the lack of appropriate incentives, hampered the implementation of integrated station area planning and development.

Strong government hands at multiple scales have shaped HSR station area planning and development in China. In contrast, the absence of non-state sector participation, including that from the civil society, in station site selection and station area development, is remarkable. The *de facto* roles of government agencies played out, in reality, may not accord with the *de jure* roles defined by their institutional mandate. It is not only because of the outdated institutions (or the lack thereof) but also the institutional overlaps between multi-scalar actors. Within the state sector, the reshuffle of responsibilities, power and resources among institutions at different scales of government over the past couple of decades has provided opportunities for negotiated arrangements either to complement or to replace legalistic, hierarchical institutional relationships. However, the inertia of sectoral behaviour to protect their own interests undermines those integration opportunities.

Declaration

This is to certify that

- i) the thesis comprises only my original work towards the degree of PhD except where indicated in the preface,
- ii) due acknowledgement has been made in the text to all other material used,
- iii) the thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

Yuelong Yang

October 2020

Preface

One journal article, titled ‘Wrestling between central and local: Planning and development of the Wuhan High-Speed Rail Station and its vicinity, China’ in *Cities* (Volume 105, October 2020, 102828, pp. 1-9) was generated from the thesis. The article was carried out in collaboration with Professor Sun Sheng Han. As the primary author, I was mostly responsible for the planning, execution and preparation of work for publication. I contributed more than 50% of the work towards the publication and have written the initial draft and performed subsequent editing in response to co-author’s and editors’ reviews. Sections 5.3 and 5.4 in the thesis include published materials from the article, which are duly acknowledged by referencing.

Acknowledgement

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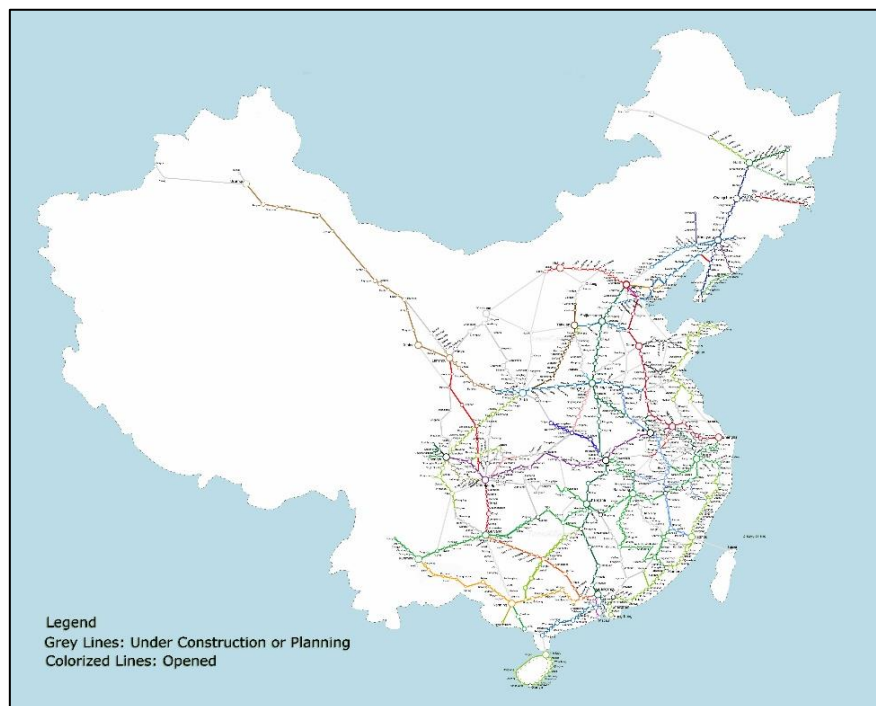
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1. Introduction

Large-scale high-speed rail (HSR)¹ development has been implemented in China in a time of rapid urbanisation (Wu, 2015), emerging city-regionalism (Han, 2015; Li & Wu, 2017) and increasing regional development disparities associated with industrial relocation (Wei, 2013). Since the first Chinese HSR line (i.e., the Beijing-Tianjin Intercity Line) inaugurated in August 2008, the length of operating HSR in China had reached 36 000 km in July 2020 (nearly 70% of the total world HSR mileage) and is expected to achieve 38 000 km by 2025 (People's Daily, 2020). Figure 1-1 illustrates the opened and planned HSRs in China. As a state strategy, the aim of Chinese HSR development is ambitious at multiple scales (Chen, 2012; Wang et al., 2012). The claimed impacts of HSR development entail not only transport and mobility improvement but also urban and regional development in spatial, economic and social dimensions (Ministry of Railways, 2004; National Development and Reform Commission, 2008). Therefore, the stakeholders involved not only include the Central Government but also local governments, market players and organisations at various scales; and the decision-making processes incorporate both cooperative and competitive interactions. Such interactions can occur at/across a range of scales, with multiple aims, explicit or implicit.



¹ According to the International Union of Railways (UIC), high-speed rail (HSR) encompasses both upgraded high-speed lines for speeds of up to 200 km/h and new dedicated high-speed lines designed for speeds above 250 km/h (UIC, 2019).

Figure 1-1. The opened and planned HSRs in China by 2019

Source: <https://www.travelchinaguide.com/images/map/train/high-speed-railway.pdf>

1.1. Research Background

1.1.1. Rapid urbanisation

Post-reform China (from 1978 onwards) has been urbanising on an unprecedented scale. Between 1978 and 2000, China added more than 286 million inhabitants to its urban areas, increasing its level of urbanisation from 17.92% to 36.22%. As of 2019, the urban population in China reached 848.43 million, a dramatic increase from 459.06 million in 2000. This implies that 60.6% of the total population lived in urban areas (State Statistics Bureau, 2020). Accompanying the phenomenal urban transformations has been a profound reshuffle of state power towards decentralised decision-making (Han, 2000; Hsing, 2006; Li et al., 2019; Wu & Gaubatz, 2013). The state has relaxed its control over budget, investment, pricing, and output and employment by state-owned enterprises (SOE) (Huang et al., 2015). Fiscal reforms in the 1990s have tightened local budget constraints by redefining the financial responsibility between the central and local states, but have also granted financial flexibility and legitimacy to lower levels in managing urban development (He et al., 2016; Pan et al., 2017). Land and housing reforms have commodified previously state-owned land and housing properties. Through *the land use control system* and *the development control system* (Wu, 2006, p. 124), the *de facto* owners and managers of critical urban resources (e.g., land and finance) – the local governments – become able to control the urban development directions while regulating land supply and the market behaviour of various actors (Wu, 2006). During this process, the Central Government has never reduced its control in managing local officials (Li, 2010; Solnick, 1996). Through an elaborate hierarchical cadre assessment and management system, performance targets set at the central level have been passed down and guided local administration and expenditure decisions to carry out central priorities even in the absence of direct control (Tsui & Wang, 2004). Political centralisation, together with economic decentralisation and fiscal reforms, has triggered fierce competition among local governments (Moore, 2014).

With investment-driven growth ambitions, competition for local growth aimed at the inflow of both domestic and foreign investments (Lin & Ho, 2005). Various projects and developmental opportunities, e.g., development zones (Yang & Wang, 2008), large events (Ye & Björner, 2018; Zhang & Wu, 2008), megaprojects (Wei, 2015) and new towns (Wang et al., 2010) have become preys of the local entrepreneurial states (Wu, 2006). Marketisation in China has led to

the surging demand of land for accommodating the increasing number of private enterprises (Huang et al., 2015). Meanwhile, the local governments' dependency on land sale revenue has also increased (Wu, 2010). Local officials have generous impulse to boost the economic development and remain competitive in the fierce competition of their political careers, by converting agricultural land into urban uses (He et al., 2016). As a result, fast urbanisation has taken place within the cities and their adjoining areas, including suburbs and beyond (Wong et al., 2015).

1.1.2. Emerging city-regionalism

A remarkable change in the twenty-first-century urbanisation of China is the recognition of city-regions, or *chengshi qun* (城市群) (for a detailed interpretation of *chengshi qun* and its English equivalents, see Han (2015) and Wu (2016)) as the policy drivers and spatial platforms of urbanisation and regional economic development (Han, 2015). In 2006, *chengshi qun* was brought into the Eleventh Five-Year Plan (FYP) and became a long-term national strategic mission. The National Development and Reform Commission (NDRC), the most influential ministry in the central, announced ten designated city-regions in 2007 (Chen, 2012). The State Council further set up directions for the location of the projected new urbanites in designated city-regions in 2014 (Han, 2015). The city-region making strategy in China aims to construct an urban division hierarchy system to find a long-term solution to the opposition and conflicts between urban and rural and between large and small cities (State Council, 2006). It has been a process driven by the state in response to the crisis of economic decentralisation, and to the fragmented economy, cutthroat competition and uncoordinated development between cities (Wu, 2016). That said, the top-down state-mandated regional agenda is not the only mechanism influences the Chinese city-regionalism. The bottom-up collaborative development initiated by local entrepreneurial states also contributes to the emerging regional governance in China (Li & Wu, 2012, 2017). City-region formation and integration usually lie in three significant aspects, that is, economic specialisation, infrastructure improvement and institutional integration (Han, 2015). In fact, the current Chinese scheme of regional integration is primarily limited to the realm of transport infrastructure (i.e., physical integration) (Li & Wu, 2017), although administrative annexation, spatial plan preparation and soft regional institution building have been observed from the state side (Wu, 2016). The city-region making process is not straightforward and linear but a deliberate strategy of scale building ridden with conflicts and tensions, which involves both state and non-state actors (Li & Wu, 2012).

1.1.3. Regional disparities and industrial relocation

One critical issue accompanying the rapid urbanisation and economic transition in China, at a larger scale (compared with urban and intra-regional scales), is regional inequality, that is, the inequality between the coastal regions and the inland regions (Wei, 2013; Ye & Wei, 2005). For instance, during the first two decades after the 1978 reform, coastal provinces like Fujian and Guangdong had undergone drastic economic development, with an average annual real GDP increase of more than 10%. In contrast, growth in interior provinces, such as Gansu and Guizhou, was much slower with a growth rate of 6% per year (Chen & Haynes, 2017). The causes are twofold: 1) the coastal regions' geographical and historical advantages of being close to the foreign market and international capital; 2) the national favourable policies and development focus to the eastern coastal provinces and cities at the initial stages of the reform. To address the challenges caused by regional inequality and economic polarization, since the late 1990s, the Chinese Central Government has promulgated a series of specific spatial policies to promote coordinated regional economic development. Examples include the *Great Western Development Strategy* launched in 1999, *Revitalise the Old Northeast Industrial Bases* in 2003 and the *Rise of Central China Plan* in 2004 (Li & Wei, 2010). Under the current administration, an ambitious global development program, the *Belt and Road Initiative*, came to the fore in 2013, aiming at collaboration with countries in Asia, Europe, and Africa (Huang, 2016). These programs usually come along with large scale infrastructure development (e.g., railway) to support growth in interior regions (Liao & Wei, 2016). At the same time, market incentives have also seen a trend of relocating labour-intensive industries (mainly manufacturing) from eastern coastal areas to inland areas since 2004 (Wang et al., 2020). Both the rising pressure from land and labour costs (Chen et al., 2018) and strengthening environmental regulations in the coastal regions (Wu et al., 2019), as well as the immense potential (cheap land and labour) and favourable policies in the central and western regions (Chen et al., 2018), are the incentives for industrial relocations. To facilitate the regional balancing strategies and the relocating of manufacturing, the Chinese government has expanded public investment to improve transportation infrastructure in inland regions (Chen & Haynes, 2017; Liao & Wei, 2016).

1.1.4. Large-scale HSR development

Against these backgrounds, when China grasped the HSR technology in the early 2000s², the government planned to embark on massive development of HSR network. According to *the Mid-to-Long Term Railway Network Plan* (MLTRNP), which was first published by the former Ministry of Railways (MOR) in 2004 and later revised and endorsed by the NDRC in 2008, the Chinese HSR network ('passenger dedicated lines', or PDL in the MLTRNP), would connect all provincial capital cities and major cities and reach a total length of 16 000 km by 2020 (Ministry of Railways, 2004). The new PLDs in China are constructed on two levels. The first level includes the trunk line HSRs, which are designed to connect the major provincial capitals and city-regions. The initial 'four vertical and four horizontal systems' of the national railway network which was expanded to 'eight vertical and eight horizontal systems' in the latest MLTRNP (2016 version) falls into this category. The second level of HSR is called the intercity PDL, acting as regional railway networks to link all cities within the same metropolitan area to form a 1-2-hour economic circle. The regional intercity HSR was firstly implemented within China's three main city-regions, the Beijing-Tianjin-Hebei Area (Jing-Jin-Ji, or JJJ), the Yangtze River Delta (YRD) and the Pearl River Delta (PRD) (Ministry of Railways, 2004), but was scaled up to nine mega city-regions after the revision of the MLTRNP in 2008 (National Development and Reform Commission, 2008).

HSR is critical not merely to move the population around but to free up the existing trackage for more freight traffic (Ministry of Railways, 2004; National Development and Reform Commission, 2008). Therefore, with the increased transport capacity both in passengers and freight services, the production factors can flow freely around the whole country and get optimised. Based on the two-level HSR network, the massive infrastructure investment in China aims to achieve different objectives at multiple scales (Chen, 2012; Wang et al., 2012). On the national scale (inter-regionally), HSRs will connect all major city-regions, assisting industrial relocation from the prosperous coastal regions to the less-developed interior areas and facilitating the regional rebalancing programs (Ministry of Railways, 2004). On the regional scale (intra-regionally), with higher accessibility and optimised connection by the intercity systems, further economic development and superior redistribution of growth

² In September 2002, China Star Train, the domestically developed high-speed train set a record of 321.5 km/h on the Qinshen Passenger Railway, marking that China has grasped the HSR technology. However, China Star Train was used in commercial service briefly from 2006 to 2007 before it was abandoned in favour of imported HSR technology. The officially asserted first HSR line in China is the Beijing-Tianjin Intercity Line, inaugurated in August 2008 before the opening of the Olympic Games in Beijing.

opportunities among cities in each region will be achieved (Ministry of Railways, 2004; National Development and Reform Commission, 2008). On the urban scale, the (re)development of HSR stations meets the urban development desire of local entrepreneurial states (Wu, 2006), accelerating the urbanisation process and restructuring the urban spatial development (Chen, 2012).

Inevitably, the broad national and regional anticipations and the parochial piecemeal local views will lead to conflicts and coordination opportunities between different scales of authorities. In the meantime, the last planning regime in China – the MOR and the railway system, has been undergoing dramatic reforms since the start of the new century, generating institutional adjustments and redistribution of power and resources among multiple stakeholders. Therefore, the question as to whether multi-scalar stakeholders play a concerted role in HSR planning and station area development decision-making has been raised. From the aspect of theoretical research, it is worth discussing what institutional arrangements have guided their strategies and how their interactions have impacted the ongoing processes of administrative reform. In terms of empirical analysis, it is also fascinating to investigate to what extent has the multi-stakeholder interaction affected the planning and development of HSR stations in China. These are the fundamental questions that this PhD study is aspired to explore.

1.2. Research Gaps

Setting itself within the policy and historical context profiled above, this thesis aims at unpacking the multi-scalar relations and changing power relations emerged in the HSR station planning practice (including site selection, intraurban transport connection and station area planning) and explaining how and why the multi-scalar interactions have impacted the planning and development of HSR stations. A review of the literature has identified how and to what extent have these questions been discussed, and importantly, what are the questions still need to be answered.

1.2.1. Theoretical gaps

Four theoretical gaps are identified in the literature. Firstly, there is a growing number of publications in the study of HSR station planning process, key stakeholders and their interactions (Albrechts & Coppens, 2003; Bellet, 2016; Feliu, 2012), and also a growing recognition of institutional dynamics such as their essential role in determining the station planning outcomes (Bellet & Santos Ganges, 2016) and their needs for efficient interest

coalitions (Loukaitou-Sideris et al., 2013). The conceptualisation of HSR stations' dichotomy as *node* and *place* suggests that their planning and development involve multi-sector and multi-scalar decision-making (Bertolini, 1996, 1998). Nevertheless, the existing literature is lopsided towards the study of the inter-sector interactions without adequate attention to the inter-scalar interactions. Among the very few exceptions that have discussed supra-local stakeholders (e.g., Albrechts and Coppens (2003) and Feliu (2012)), emphases are placed on the unidirectional impacts from the upper level which are labelled as exogenous forces. The literature offers little insight into the multi-scalar interactions and implications.

Secondly, there is an urgent need for a scale-sensitive analytical framework which combines the analyses of station space (planning object), scalar structure (planning context) and scalar interactions (planning process). Although Bertolini and Spit (2005, p. 4) have proposed the 'planning triangle' to investigate HSR station planning decision-making, their framework is operationally immature (being short of exercisable analytical tools), which is not forceful to achieve the 'balanced theorisation' of the three elements (Hartmann & Geertman, 2016, p. 67). More importantly, the framework is inter-sector oriented and scalar-blunt, which cannot capture the multi-sector and multi-scalar nature of contemporary infrastructure planning (Romein et al., 2003). Among the few exceptions which explore the inter-scalar dynamics in HSR planning (e.g., Xu (2017) and Zhang et al. (2020)), the discussions are not aimed at a full examination of the siting process of HSR station planning, and the functional duality nature of the station is mostly overlooked. A scale-sensitive analytical framework combining the three elements would be essential to detect the links between them, that is, the interplay between the station space, the context and multi-scalar actors.

Thirdly, the scale study has moved the urban study focus beyond horizontal partnerships to embrace the relations among actors from different geographical scales. It has been unfolded into two schools. The state rescaling school focuses on the perpetually redefined, contested and restructured scales (state spatiality) (Brenner, 2001, 2004b; Jessop, 1990; Swyngedouw, 1996), but they are charged with reification (MacKinnon, 2011), and their grand narratives and historical periodisations fail to interpret the dynamics of actors and the inter-scalar interactions (Cox, 1993). Another group of scholars – the politics of scale school – concentrates on how different social forces have cast about for manipulating and transforming scalar relations thus the strategic deployment of scale and scalar relations by various actors, movements and organisations. However, they are weak in theorising the interactive relations between scalar structure and social struggles (Cox, 2010; MacLeod & Goodwin, 1999; Smith, 1992, 2002).

Both schools acknowledge that scalar transformations occur through the spiral interactions between inherited scalar structures and the emergent, transforming regulatory projects and strategies (Brenner, 2001; MacKinnon, 2011). However, they fail to provide a practical exercisable framework to scrutinise the scalar interactions by jointly considering the inter-scalar interactions between actors and their interactive relations with the scalar structure. Furthermore, existing studies are extensively scalar tension-focused, whereas the concordant scalar relations are understudied.

Lastly, there is much room to bridge and cross-fertilise the Western and Chinese academic communities and their respective research streams. On the one hand, the Western urban governance theories and approaches need to be fused with indigenous Chinese governance concepts and the unique institutional settings, to enable the applicability of the ideas outside of their area of origin (Hensengerth, 2015). Increasing studies suggest that the unique institutional settings (e.g., the fragmented authoritarianism) and the indigenous governance concepts (e.g., *tiao-kuai*, *xitong*, administrative ranks, etc.) remain crucial when investigating the multi-scalar and multi-sector decision-making. On the other hand, the rapid urban and economic development and the continually changing institutional arrangements in China provide the best arena to examine these Western governance study approaches. Additionally, the indigenous Chinese concepts (e.g., administrative ranks, *guanxi*, etc.) call for systematic interpretations (Cartier, 2004; Cartier, 2011; Ma, 2005). Nevertheless, studies that have sufficiently coupled the Chinese concepts with Western theories are still limited, and those in the rail sector or the scalar politics domain are even rare.

1.2.2. Empirical gaps

Four major empirical gaps are specified in the literature. First, current studies fail to take into account the ongoing institutional restructuring and the incremental policy changes (e.g., the railway system reform in China) which shifts the power, resources and mechanisms of HSR station planning. They tend to focus on one specific timing of station planning rather than the whole period of institutional changes. Second, Wuhan is located at the geographical centre of China and functions as one of the four largest railway hubs in the Chinese HSR network. However, empirical studies on inter-scalar interactions in HSR station planning in Wuhan is rare. Third, current research efforts primarily focus on the multi-stakeholder interaction in HSR station site selection process; few researchers probe into the interactions throughout the whole planning process. This led to the disjoint efforts in the study of the critical stages, such as siting,

intraurban transport connection and station area planning. Fourth, most studies use one single station or multiple stations but from different cities to examine the planning process; few studies use multiple stations in the same city where the local institutional and social-economic contexts are the same. Wuhan provides such a perfect laboratory as there are in total three existing HSR stations (two upgraded stations and one newly built station) and one under planning, sitting at different places of the cities (two in the inner-city area, one in the outer-city area and one at the urban fringe). Therefore, it offers a great opportunity to adopt a multiple case study approach to systematically investigate the inter-scalar interactions on different types of station planning during different times. Chapter 2 reviews the theories, empirical evidence and limitations in detail.

1.3. Research Objectives and Research Questions

1.3.1. Research objectives

HSR station planning unfolds in complex situations characterised by inherent contradictions derived from the duality of the stations and divergent forces from multi-sector and multi-scalar participation: Decision-making develops between central authority, local autonomous decision-making and the involvement of international parties, between formal and informal interactions, and between the privilege of governmental actors and bottom-up pressures private sector and the civil society. The result highlights the contradictions between a seemingly rigid hierarchical governance structure and a fragmented and contentious decision process. The primary aim of this research is to make a thorough inquiry into the inter-scalar interactions in HSR station planning and probe into the decision-making process to see the scalar articulations, interactions and re-articulations, drawing support from concrete examples of HSR stations in Wuhan, China, where the power adjustment and redistribution are prominent. The research covers the time between the earlier 2000s (when Wuhan started planning its first HSR station in the former MOR era) and the time of writing (when Wuhan finished the site selection and the initial station area planning for the New Hanyang Railway Station). During this period, the Chinese railway system has gone through significant changes, and the city of Wuhan has undergone rapid economic, spatial and urban transformations.

In this regard, the research is organised to meet three specific objectives:

- To investigate the institutional and policy settings (scalar structure) in the Chinese railway regime and assess the inter-scalar relations (conflicting/concordant) between multiple stakeholders in the HSR station planning processes;

- To discover the interactions among different stakeholders (strategic deployment of scale and scalar relations) during the process of station site selection, intraurban transport connection and station area planning;
- To evaluate the impacts of inter-scalar interactions on the planning outcome (which may manifest in aspects such as locations of stations, connections with other transport modes, and land use plans).

1.3.2. Research questions

This thesis seeks to address the following three questions:

- What kinds of institutional/policy settings are responsible for the complicated relationships alternating between confliction and cooperation among the various stakeholders in decision-making associated with HSR station planning and development?
- How do stakeholders manage their resources, opportunities, and interests for cooperation with and competition against each other in the multi-scalar setting?
- What planning outcomes are observed, and to what extent have the inter-scalar interactions impacted the existing scalar structure?

1.3.3. Key terminologies and discourses

Scales

Built on the notion of the ‘social construction of scale’, in this research, scales refer to geographical scales produced by wider socio-economic, political and cultural processes, instead of the traditional Euclidian, Cartesian and Westphalian notions of geographical scales as fixed, bounded, self-enclosed and predefined arenas or containers within which such processes unfold (Smith, 1992; Smith, 2008; Swyngedouw, 1997). Therefore, the common terminologies such as global, national, regional and urban, will not be taken as fixed and pre-given scales in the research but as “*perpetually redefined, contested and restructured in terms of their extent, content, relative importance and interrelations*” (Swyngedouw, 2004, p. 33). The notion of scale herein is threefold: First, the scale is one dimension (albeit a particularly crucial one) of social spatiality (socio-spatial processes), that is, the scalar dimension (Brenner, 2001; Jessop et al., 2008; Mansfield, 2005). For instance, the scalar dimension of modern state power is embodied in the multi-tier regulation processes and state institutions at multiple levels. Second, not only the scales but also the scalar relations are not fixed, thus continuous

reshuffling and reorganising. Third, as processes of socio-spatial differentiation unfold both materially and discursively (Brenner, 2001), the construction of scales is sensitive to both material and discursive dimensions (MacKinnon, 2011). Stakeholders manoeuvre and take advantage of both the material and discursive of scale in pursuit of their interests.

Scalar politics

To highlight and explore the interactive struggling decision-making process in HSR station planning, this research heeds MacKinnon (2011)'s call on replacing the privileged concept of 'the politics of scale' with 'scalar politics', by bridging the early 'politics of scale' studies with the poststructuralist findings. Scalar politics refers to the recursive relationship between socio-economic processes producing scales and scales supporting/constraining social practice but bears in mind that it is just one dimension of the socio-spatial dialectics. In this regard, the scalar politics in HSR station planning refers to the recursive relationship between multiple actors' interactions and the scales' supportive or restrictive implications on their interactions. The scalar politics concept contains four foundations: 1) it emphasises that political projects and initiatives have scalar aspects and repercussions and rejects the existing rescaling studies' implication of scale-centred analysis; 2) it stresses the strategic deployment of (discursive and material dimensions of) scale by various actors, organisations and movements; 3) it concerns the always emergent and mutually transformative evolution of pre-existing scalar structures (can be temporarily sedimented and fixed) and emergent social activities; 4) closely related to the third foundation, the last aspect deems that the creation of new scalar arrangements and configurations (scalar structure) occurs at the timing of confrontation between inherited and emergent projects and scales (MacKinnon, 2011).

Scalar structure and inter-scalar interactions

Scalar structure in this research mainly refers to the scalar structure of the state, which is equivalent to the state's 'scalar division of labour' in Cox (2010, p. 216). It is embodied particularly in their territorial/administrative incarnations: '*the distribution of powers and responsibilities between the state and the various forms of local government – county, municipality, and township*'. The scalar structure provides a crucial context for multi-stakeholder interactions, but itself is not fixed or stable. As discussed in the 'scalar politics' section, the scalar structure can be temporarily sedimented but will perpetually interact with the emergent social activities. The scalar structure will cause scalar tensions or (temporarily) concordant relations between multi-scalar stakeholders or multi-scalar state political projects

and strategies (Park, 2008). The reason is that both political projects/strategies and place-dependent interests can be defined and organised at different geographical scales, thus influencing one another, positively or negatively. *Inter-scalar interactions* refer to the cooperative and competitive interactions between multi-scalar stakeholders and political projects or strategies based on different place-based interests defined at different geographical scales. In the HSR station planning decision-making, various actors, organisations and movements harness and manipulate the discursive and material dimensions of scale effectively in search for their priorities (MacKinnon, 2011). By distinguishing the pair of concepts (scalar structure and inter-scalar interactions), the decision-making process and institutional changes in HSR station would be highlighted and thoroughly dissected. However, the research would keep in mind the notion of scalar structuration (Brenner, 2001, 2004a), which conveys the coinstantaneous processes of scalar structure and inter-scalar interactions.

1.4. Case Studies: Planning HSR Stations in Wuhan, China

Three HSR stations in the city of Wuhan are selected to address the three research questions and the identified theoretical and practical concerns on inter-scalar interactions in the HSR station planning decision-making. Wuhan was chosen for its strategic role in the Chinese railway (and also HSR) network and its political and economic importance to China. Wuhan is the capital city of Hubei Province. It is the largest city (both in terms of population and economy) in the middle reaches of the Yangtze River (Figure 1-2). It lies at the economic, geographic centre of China and all main metropolises are enclosed within a 1,200 km radius circle centred on Wuhan. Historically, Wuhan was described as ‘*the Centre of the whole Empire, and the place from which it is easiest to keep a communication with the rest of the provinces*’ (Han & Wu, 2004). The strategic location of Wuhan has led to its unique position both in the historical and current railway networks in China. Wuhan is one of the nine national central cities (*guojia zhongxin chengshi*, 国家中心城市) in China (the other eight cities are Beijing, Tianjin, Shanghai, Guangzhou, Chongqing, Chengdu, Zhengzhou and Xi’an). Being at the top of the urban hierarchy in China, Wuhan has the potential and responsibility to act as both a gateway for the export-oriented economy and a locomotive for city-region making. It has gone through rapid urban development since the last two decades, with many economic and technological development zones (e.g., the Optics Valley, Dunkou Development Zone, etc.), new towns and mega-infrastructures having been built. As a city with a long history of railway development, Wuhan also places great expectations on HSR in the new era. The

municipal government hopes to lift their economy and urbanisation and restore Wuhan's place in China through the making of an HSR hub city.

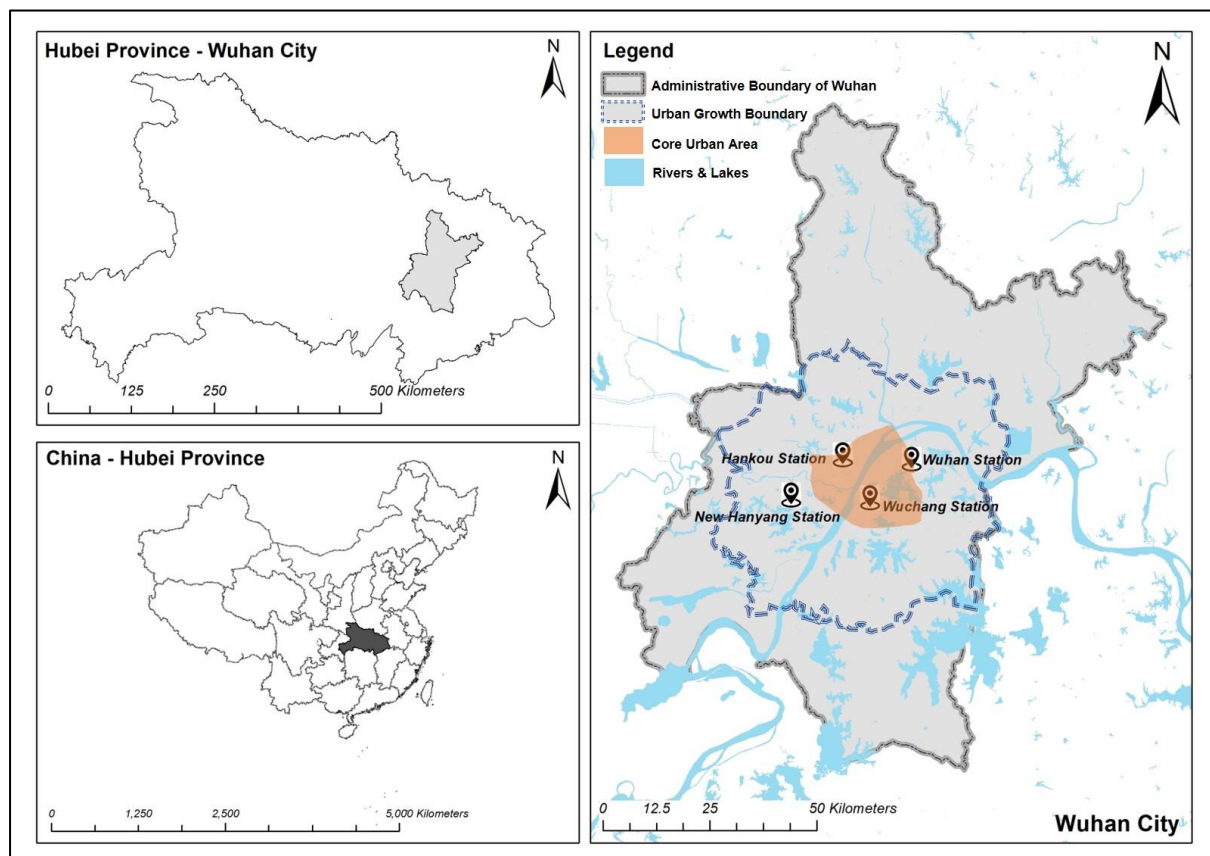


Figure 1-2. Location of Wuhan and the HSR Stations in Wuhan

Source: Author

Of the three chosen HSR stations in Wuhan, Wuhan Railway Station is a dedicated HSR station located at the edge of the city, Hankou Railway Station is an upgraded station sitting in the inner-city area (both were built or redeveloped in the former MOR era), whilst the New Hanyang Railway Station, which is still under planning, is planned after the reform of the railway sector and will be located in the urban periphery. Each station plays (or will play) a different role in the HSR network and carries distinct anticipations of stakeholders from different scales. The abundant stations in Wuhan with diverse geographic, historical and institutional backgrounds provide a perfect laboratory to examine the inter-scalar interactions in station planning decision-making.

1.5. Organisation of the Thesis

The thesis has nine chapters (Figure 1-3). After this introductory chapter, Chapter 2 first reviews the literature on HSR station space planning and development. By discussing the

planning object (HSR stations), the multi-stakeholder participation in the process, and the institutional and policy setup of the context this chapter provides a background for the research. It is followed by a synthesis of the research gaps in HSR station planning literature, that is, the missing scalar dimension and the deficiency of a framework which combines the analyses of the station space, scalar structure and scalar interactions. It then considers both theoretical and empirical studies on multilevel governance (MLG) and the scale studies to search for analytical tools to dissect the HSR station planning process. The traditional Chinese studies on fragmented authoritarianism, central-local relations and administrative hierarchy are also reviewed. This chapter details the research gaps and informs the connections between the current theories, which facilitate the design of the research methodology.

Chapter 3 focuses on research design and methodology. After presenting the analytical framework, this chapter outlines the research strategies and methods of data collection and analysis. It explains the reason for the adoption of a qualitative (multiple case study) approach, the selection of Wuhan and the three HSR stations in Wuhan as the case city and case projects respectively. The research adopts the purposive sampling strategy in recruiting correspondents for semi-structured interviews and site observations. It then illustrates the process of data collection, including secondary data, site observations, and 41 semi-structured interviews, and how the collected data were analysed.

Chapter 4 gives an in-depth introduction for the changing scalar structure of HSR planning in China, which not only establishes the context of HSR station planning for case study analyses in Chapter 5, 6 and 7 but also constitutes an integral part of the empirical analysis on scalar politics. It begins with a discussion of the HSR development process and the scalar structure changes in China. This is followed by an introduction for the metropolitan development in Wuhan, which sets the scene for detailed analysis of three different HSR stations (Hankou Railway Station, Wuhan Railway Station and the New Hanyang Railway Station) in Wuhan.

Chapter 5 to 7 are the three case study chapters, which zoom into the respective planning and development process of the three HSR stations in Wuhan in each chapter. Based on the empirical investigation of the changing scalar structure in the rail sector and the socio-economic context of Wuhan in Chapter 4, the three case study chapters pay more attention to the inter-scalar interactions in specific decision-making processes. They all begin with a profile of the case study station. The theoretical framework presented in Chapter 3 facilitates the combined analysis of the functional duality of the stations, multi-scalar expectations, scalar

division of labour among actors and the planning politics in each case. They are not separate things from Chapter 4 but would together provide a whole picture of the scalar politics in HSR station planning. The planning and development outcomes of the stations are presented and discussed in each chapter.

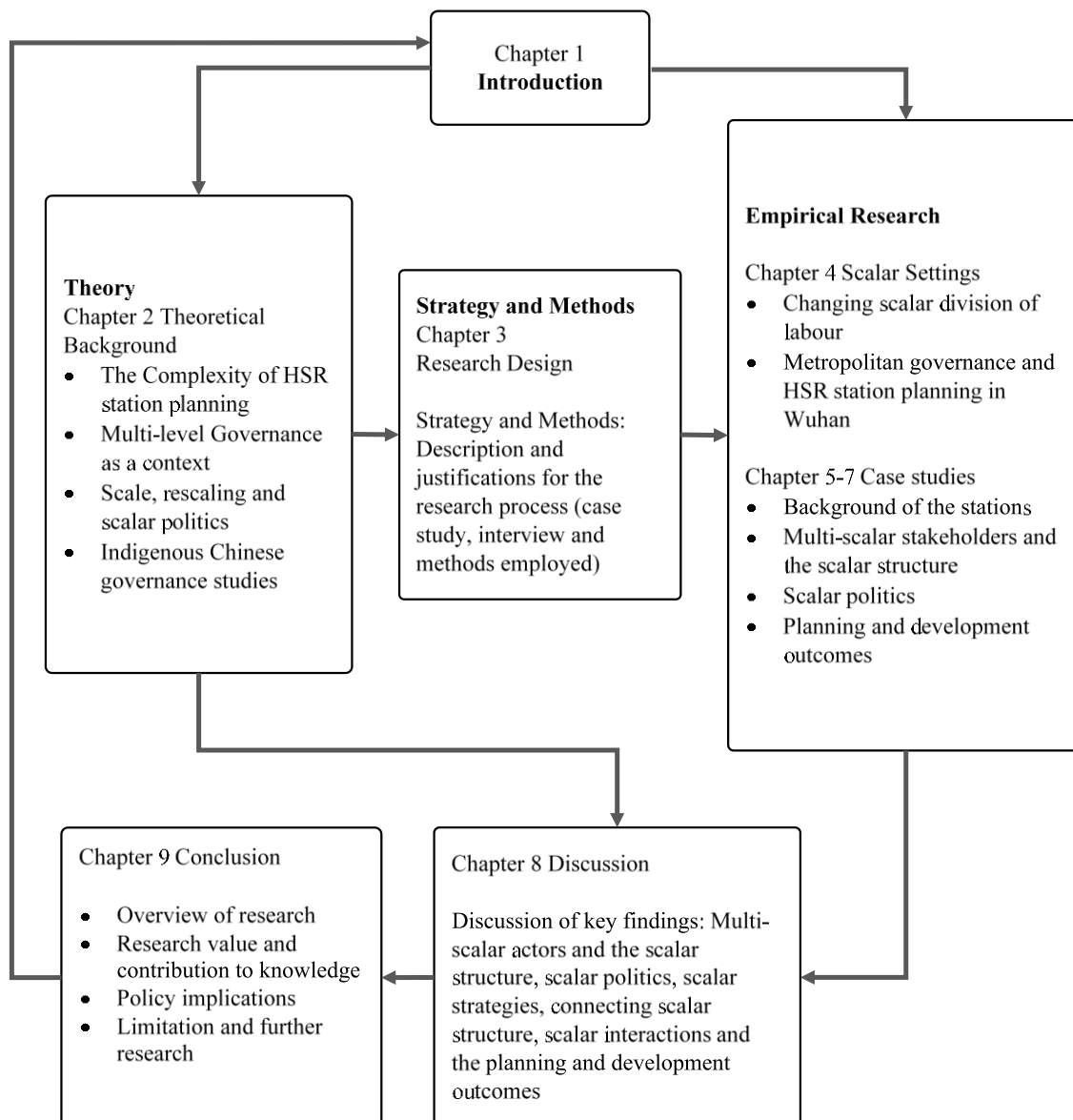


Figure 1-3. Thesis structure

Source: Author

Chapter 8 reflects on the conceptual framework and discusses the preliminary findings and arguments gained through the preceding empirical analyses, with references to the literature reviewed in Chapter 2 and HSR station planning issues raised in Chapter 1. By comparing the

three HSR station planning cases in Wuhan in terms of the station functions, planning processes, leading players, structural settings, scalar strategies and the various planning outcomes, Chapter 8 fully answers the three research questions of this thesis. Besides, Chapter 8 provides nuanced interpretations on HSR station planning issues in general and in China in particular. It discusses the functional duality of the stations and the induced multi-player decision-making and analyses the implications of key governance, policies, regulations and laws relating to HSR station planning and development in China.

Finally, conclusions are drawn in Chapter 9. It summarises the main findings and presents a conclusion of the study and suggestions for future research and policy innovations. Research limitations and future research questions are also discussed.

2. Literature Review

2.1. Introduction

This chapter provides a theoretical review of the literature on HSR station planning, multi-level governance (MLG), scale studies and the indigenous Chinese research on governance. Section 2.2 reviews the literature on HSR station planning and development. By discussing the planning object (HSR stations), the multi-stakeholder participation in the process, and the institutional and policy setup of the context, this section details the research gaps in HSR station planning literature, that is, the missing scalar dimension and the deficiency of a framework which combines the analyses of the station space, scalar structure and scalar interactions. The following three sections aim to search for analytical tools to dissect the HSR station planning process, especially paying attention to theories and approaches that emphasis interactions between the institutional setup and multi-scalar interactions. Section 2.3 focuses on both theoretical and empirical studies of MLG. Section 2.4 revisits the scale literature and assesses the conceptualisation of scale, state rescaling, politics of scale and scalar politics. Section 2.5 reviews the on-going Chinese studies on fragmented authoritarianism, central-local relations and administrative hierarchy. It serves not only as of the context but also provides powerful analytical perspectives and devices to the empirical study. Section 2.6 details the research gaps and informs the connections between the current theories.

2.2. Overview: What We Know About HSR Station Planning

HSR station planning is complicated because of the duality of the station (i.e., *node* and *place*), the multi-stakeholder participation in the process, and the institutional and policy setup of the context (Bertolini, 1998; Bertolini & Spit, 2005; Yang & Han, 2019). With the rising recognition of the multi-sector and multi-scalar decision-making of large infrastructures (Romein et al., 2003; Salet et al., 2013; Vickerman, 2008), the literature on HSR station planning, however, is lopsided towards the study of the inter-sector interactions without adequate attention to the inter-scalar interactions. Besides, a scale-sensitive analytical framework with the ‘balanced theorisation’ of the three elements of the ‘planning triangle’ (i.e., object, process and context) (Bertolini & Spit, 2005; Hartmann & Geertman, 2016, p. 67) is still in urgent need for a throughout study of the interactive relations between the station space, the scalar structure and inter-scalar interactions.

2.2.1. HSR stations as nodes and places

Bertolini (1996) firstly underlined the significance and particularity of stations by putting forward the dichotomy of station space as both ‘nodes’ in the transport networks and ‘places’ in the city (p. 332). His intriguing argument derived from both Castells (1989)’s and Dematteis (1988)’s respective conceptual frameworks that aimed to elaborate the “*tension between [the] space of global connections (the ‘space of flows’ in Castells; the ‘geography of networks’ in Dematteis) and [the] space of local disconnections (the ‘space of places’ in Castells; ‘the geography of areas’ in Dematteis)*” (ibid; p. 332). Stations may develop into virtual nodes in both transport and non-transport (e.g., socio-economic) networks or a dense and dynamic gathering place of urban activities (Bertolini, 1996; Peek & Louw, 2008). Conceptually, the dichotomy of HSR stations would generate two orientations of probes (Figure 2-1): one is the inter-sector interactions between urban (e.g., land use) planning and transport (traffic) planning; the other is the inter-scalar interactions between the local and supra-local authorities. However, only the former has drawn enough research interests, and much ink has been spilled in Bertolini’s follow-up studies (Bertolini, 1996, 1998, 2000; Bertolini & Spit, 2005; Chorus & Bertolini, 2011; Peek et al., 2007); the latter was neglected to a large extent by himself and the adherents (Chorus & Bertolini, 2011; Peek et al., 2007; Peek & Louw, 2008).

From the inter-sector perspective, the dichotomy of HSR stations indicates that both positive (reciprocal relationships between accessibility and density) and negative (contradictions in space, function and management) interrelations may exist between the two attributes (Bertolini et al., 2012). In HSR station planning, a balance between the node-content and the place-content is desirable but not granted. Planning approaches like transit-oriented development (TOD) may facilitate collaborating transport development with urban development. However, governance reforms may be the prerequisite for TOD approach because of the involvement of multiple stakeholders (Bertolini et al., 2012; Curtis et al., 2009). The duality of stations not only reveals the ambivalent nature of the station site but also points to the significance of multi-stakeholder interactions and the underlying processes in HSR station decision-making (Bertolini & Spit, 2005). Nevertheless, the currently lopsided perspective (with only transportation and urban connotations) may neglect the complex interaction between stakeholders with different foci in socio-economic interests and ambitions.

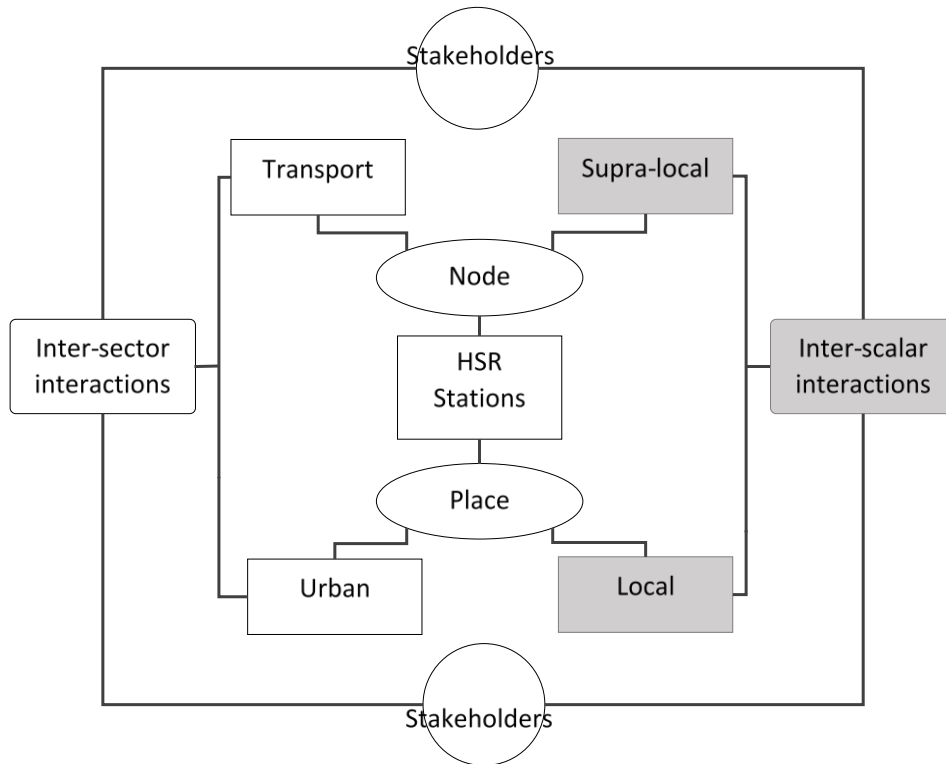


Figure 2-1. The conceptualisation of HSR stations and the induced multi-stakeholder interactions

Source: Author

2.2.2. The complexity of HSR station planning

The process complexity is first felt by the wide range of stakeholders, involving those from both public and private sectors and both local and national tiers. Primary actors usually include the national railway company and multilevel local governments. Still, private developers, chamber of commerce, various transport agencies, sitting tenant and users may also play a crucial part in the decision-making, contingent on territorial and institutional setting (Albrechts & Coppens, 2003; Feliu, 2012; Leheis, 2012). In European countries such as France, Sweden, Switzerland, Spain and the Netherlands, the governments and the national railway company were the initiators and organisers to plan and develop the stations; The only exception was Britain, where the decision-making was dominated by developers and the railway company, whereas the governments' role was limited (Bertolini & Spit, 2005; Pol, 2008). In Japan, both the railway infrastructure and large parts of the area surrounding the station were owned by the national/regional railway companies, who was in charge of planning, development and even selling of land parcels around the stations (Molotch & Vicari, 1988).

Since stakeholders joined the station project and the development of station areas at different aims, there may be both conflicts and cooperation opportunities between them (Pol, 2008). For instance, transport agencies focused on increasing ridership and enhancing transport efficiency; local governments were most concerned with employment, economic and urban (re)development opportunities; developers and investors pursued the return-on-investment (Renne, 2009). They were empowered by resources on hand, e.g., land, knowledge/technology, capital, and role in decision-making (Pol, 2008). During the processes, exchanging of resources and balancing of interests among key players were the regular solutions for both tensions and cooperation (Pérez-Henríquez & Deakin, 2017).

The institutional and policy context may also favour or hinder solutions to collective action problems derived from the dual attributes of HSR stations and the conflicting pursuits of stakeholders (Bertolini, 1998). Railway privatisation and the induced institutional rearticulation in Europe in the 1990s gave rise to the quest for land value increment profits. Stakeholders established joint ventures and public-private partnerships (or, PPP) to jointly fund HSR projects and the induced urban (re)development programmes (Pérez-Henríquez & Deakin, 2017). Besides, multi-stakeholder interactions were also subject to the financial and land value capture arrangements in a given context (Wang et al., 2012). It would ultimately influence the land use planning outcome of the station areas and the division of profits among various stakeholders.

2.2.3. Towards a multi-scalar planning approach

The literature on HSR station area planning shows a deficiency in two aspects. Firstly, a ‘balanced theorisation’ (Hartmann & Geertman, 2016, p. 67) of all three dimensions (i.e., object, process and context) is still rare. Secondly, existing researches concerned mainly with the tensions between stakeholders at the local scale but offer little insight into the multi-scalar interactions and impacts (Peek et al., 2007). Among the very few exceptions that have discussed supra-local stakeholders, emphases have either been given to the unidirectional influences from the upper level which are labelled as exogenous forces (Albrechts & Coppens, 2003; Feliu, 2012) or to part of the planning process (e.g., site selection) (Xu, 2017; Zhang et al., 2020). The interaction and transition between multiple scales of agencies and the station area planning (e.g., land use and intraurban transport planning) have been neglected to a large extent. A scale-sensitive framework with the ‘balanced theorisation’ of all three elements is thus in urgent need to fill the gaps.

Transport planning literature pays more attention to the planning object and tends to launch the elaboration from the nature of the infrastructure. As Curtis (2016) shows, there has been a tradition to consider functions (e.g., traffic function and place function) from the perspective of different stakeholders. Their inquiries, therefore, lay the foundation to incorporate not only the planning policies but also the planning processes and context into the study (Salet & Thornley, 2007; Veeneman & Mulley, 2018). On the contrary, urban governance studies position power and power relations at the heart of enquires but lapsed to pay adequate attention to the functions of the planning objects (Li et al., 2014; Zhang et al., 2020). In this regard, transport planning studies need cross-fertilising with urban governance studies to reach a ‘balanced theorisation’.

Bertolini (1998) suggested incorporating ‘regime theory’ into the HSR station planning study, after identifying the functional duality of the station. Regime theory is effective in investigating power (de)constructions in the station planning decision-making (Stone, 1993; Storper, 1997); however, it is excessively local-oriented, without considering the rescaling of governmental and political relationships caused by globalisation (Peters & Pierre, 2001; Pierre, 1999). On the contrary, two approaches emphasising the rapid rescaling occurring in the economy, spatial organisation, as well as institutional systems, can be identified as multi-level governance (MLG) and the scale study. Both approaches have been applied in largescale (transport) infrastructure planning studies and show great potential in dissecting the inter-scalar dynamics (Li et al., 2014; Vickerman, 2008; Xu, 2017; Zanon, 2015). The next two sections revisit the MLG and scale study respectively and aim to draw a practical analytical framework with concrete devices to inspect the scalar interactions in station area planning.

2.3. Multi-Level Governance as a Context

This section considers the origins, development and central issues in MLG studies. It argues that despite focusing on dynamics between levels and showing the high potential of multi-disciplinarity, MLG remains underdeveloped (Ansell & Torfing, 2016; Ongaro et al., 2010). It fails to provide a practical framework to clearly predict or even explain the outcomes in the governing process, apart from the most general ones, e.g., institutional overlaps and governance gaps. Furthermore, with the notion of pre-given levels as the locus of authority, MLG shows deficiency to correlate multi-scalar interactions with the changing institutional setup.

2.3.1. An inclusive concept with both vertical and horizontal dimensions

The term ‘multi-level governance’ emerged and developed with the process of European integration. It was designed to understand the EU structural fund policy (now generally known as the ‘cohesion policy’) processes, which has provided an alternative to the *neo-functionalist* and *inter-governmentalist* debates on the nature and process of European integration (Marks, 1993). Whilst *inter-governmentalists* stressed the central role of national governments in seeking profits and avoiding harms of European integration, *neofunctionalists* insisted on the rising interdependence between national governments and supranational actors (Bache & Flinders, 2004a). MLG, however, has moved from the two-level (national and supranational) dominated decision-making in the debate and theorised the EU as a multi-level political system to underline the vital role of subnational actors (Bache et al., 2016).

The MLG concept reveals the shifting and uncertain patterns of governance, where both supranational and subnational actors are involved in the EU decision-making (Marks, 1993). By using ‘governance’, it also acknowledges the transformation from ‘government to governance’. MLG thus incorporates both vertical and horizontal diffusion of power. Bache and Flinders (2004b) specified that “‘Multi-level’ referred to the increased interdependence of governments operating at different territorial levels, while ‘governance’ signalled the growing interdependence between governments and non-governmental actors at various territorial levels” (p. 3). It seems that various forms of governance can be embraced under the umbrella concept of MLG, e.g., decentralisation/devolution, the rise of subnational/supranational actors, the ‘hollowing-out’ of the national authority, and the networked governance between multilevel governments and organisations (Hensengerth, 2015); however, a closer inquiry of how the term MLG is usually defined and applied to empirical analyses discloses the tension between the ‘label’ and ‘content’ of this term (Büchs, 2009).

2.3.2. Two types of Multi-Level Governance

Early works on the conceptualisation of MLG focused on the vertical dimension of state power diffusion and neglected the increasing role of non-state actors in EU policy-making (Bache et al., 2016). For instance, the initial MLG definition referred to as ‘a system of continuous negotiation among nested governments at several territorial tiers’ (Marks, 1993, p. 392). In their later work, Marks and his colleagues still emphasised the vertical dimension by describing MLG as ‘the dispersion of authoritative decision-making across multiple territorial levels’ (Hooghe & Marks, 2001, p. xi). Their biased discussion drew much criticism as the sideways

flows of power was primarily overlooked whilst the role of subnational actors was overstated, which was against the initial intention of the term MLG (Bache et al., 2016).

To respond to the criticism and further comprehend both the horizontal and vertical dimensions, Hooghe and Marks (2003) distinguished a two-fold typology of MLG models from various works of literature, which they labelled Type I and Type II MLGs. The previously neglected horizontal dimension thus was integrated into their concept of Type II MLG, encompassing complex, fluid, task-specific, overlapping jurisdictions which involves both state and non-state actors from various levels (Bache & Flinders, 2004b; Büchs, 2009). Type I MLG resonated with federalism. It took the notion that authority is dispersed but restricted to a limited number of ‘*general-purpose, nonintersecting, and durable*’ jurisdictional boundaries at a limited number of levels (Hooghe & Marks, 2003, p. 233). Table 2-1 shows the key features of the two types of MLG (for a detailed comparison of the two types see Bache et al. (2016)). Marks and Hooghe (2004) argued that the two-fold typology expands the study focus from the (re)assignment of fiscal and public policy responsibilities between jurisdictions to a broader scope, shedding some light on the analysis on how different jurisdictions interact with each other. Although this contribution still has not erased all the doubts surrounding the conceptual precision of MLG (e.g., the charge of ambiguity in the referents of MLG by Jessop (2004) and the accusation of lack of mechanisms to explain the dynamics and outcomes of decision-making by Benz (2010)), it does become the foundation of subsequent work in this field (Bache et al., 2016).

Table 2-1. Key features of Type I and Type II MLG

	Type I	Type II
Basic features	General-purpose Non-intersecting membership Durable, system-wide design Limited levels	Task-specific Intersecting Flexible, changeable design Unlimited levels
Location	National and subnational levels EU	International–national border Cross-border regions Local
Biases	Intrinsic community Deliberation and voice Conflict articulation Consolidation	Extrinsic community Choice and exit Conflict avoidance Fragmentation

Source: Bache et al. (2016, p. 490; Table 40.1)

According to Bache et al. (2016), contemporary MLG studies are mainly divided into three categories. The first group of scholars inquire about intergovernmental relations with a focus on the diffusion of power between levels of government in the context of the rising influence of supra- and sub-national actors (Zürn, 2012). Both institutional overlaps (Peters & Pierre, 2001) and governance gaps (Pierre, 1999) have been identified. Another group of studies use the two-fold typology of MLG to explore the nexus between territorial and functional governance (Büchs, 2009) and the changing state-society relations under the background of ‘territorially overarching’ and ‘trans-governmental’ networks (Bow & Zaiotti, 2020). The third category concerns the normative issues. It argues the advantages of MLG in carrying out policymaking in practice rather than its explaining power in theory. It is because that a scalar flexible governance structure (i.e., operating at multiple territorial levels) would be more inclusive to heterogeneous preferences and better internalise policy externalities at different levels (Marks & Hooghe, 2004). Hence, MLG is normatively superior to national dominated decision-making. However, it is worth noting that democratic accountability has always been a critical concern for the implication of MLG (Peters & Pierre, 2004).

2.3.3. A fuzzy concept with limited analytical power

As the MLG concept emerges, this approach has been applied to different countries in various constitutional contexts. Bruszt (2008) placed the MLG in post-accession Eastern European countries (including the Czech Republic, Hungary and Poland) and identified four types of MLGs, i.e., hierarchical-centralised, hierarchical with some decentralisation, inclusive-centralised and networked MLGs. Stubbs (2005) tried to apply MLG into South-East Europe and called for the enrichment with the inclusive notion of scales and complex forms of policy transfer to move MLG beyond its origin. Ongaro and his colleagues bridged MLG with IGR in the US through two edited volumes (Ongaro et al., 2010, 2011). MLG has also been identified in Australia, showing as the collaborative exchanges and greater engagement between institutions at different levels in the federation (Painter, 2001). Apart from the many studies in the Western countries, MLG has also found its empirical footing in Asian countries, such as Thailand, Malaysia, Indonesia, the Philippines, South Korea (Shair-Rosenfield et al., 2014) and China (Hensengerth, 2015; Yang, 2005).

MLG has also been applied to transport planning. Vickerman (2008) used MLG to identify the spatial mismatch between transport infrastructure decision-making and their implications in border regions. His findings reveal that transport decisions are often made at the local level.

Still, the infrastructure impacts may spill over regions and affect the effectiveness and efficiency of the high-level networks. Through a case study of the railway tunnel project in Europe, Zanon (2015) found the necessity of efficient multilevel governance procedures to tackle the complexity of contradictory interests at different scales since the traditional nested institutions and governing mechanisms are no longer practical. Veeneman and Mulley (2018) argued that the distribution of decision power and funding among multilevel actors accounted for public transport solutions. Randstad-Flemish Diamond corridor was used by Romein et al. (2003) to show the piecemeal appeals of stakeholders from various spatial scales in large-scale infrastructure planning and how their narrow perspectives have impacted the project. The common ground between these case studies is that the multi-scalar and multi-sector planning context has brought tensions in decision-making that calls for changes of governance. Their analytical methods, however, differ from one another.

Despite being gradually recognised and accepted within and beyond academia, MLG remains a fuzzy concept, and the explanatory depth and theoretical reach of MLG still need to be enhanced. Based on the review, at least three aspects of defect can be identified. First, the two-fold typology is theoretically clear but are difficult to distinguish in reality. For instance, state agencies are usually task-specific. Still, they are highly embedded within the governmental institution, thus showing both features of Type I and Type II MLGs (like the *Rail Regulation* in the UK and the railway regime in China). Second, even though there is a sign of going beyond the binary divide (Piattoni, 2010), MLG still fails to provide an analytical tool to facilitate the understanding of variety and interconnectedness autonomy between governments and organisations at different levels (Rosenau, 2004). Lastly, MLG pays little attention to the power and role of the nation-state in metagovernance (setting the ground rules for governance) (Jessop, 2004) and is confined to a consideration of pre-given scales as the locus of authority (Hensengerth, 2015). It crucially needs to think about the power relations that decide the manner and form of the unbundled levels, arenas, and regimes of politics. Therefore, this study argues that MLG is more applicative as a context than as analytical tools.

2.4. Incorporating Scalar Structure with Scalar Interactions

The scale study has moved the urban study focus beyond horizontal partnerships to subsume the relations between multilayered governments. It has been unfolded into two schools. The rescaling school focuses on the perpetually redefined, contested and restructured scales of regulation/governance (state spatiality) (Brenner, 2001, 2004b; Jessop, 1990; Swyngedouw,

1996), but they are charged with reification (MacKinnon, 2011), and their grand narratives and historical periodisations fail to interpret the dynamics of actors and the inter-scalar interactions (Cox, 1993; Mansfield, 2005). Another group of scholars – the politics of scale school – concentrates on how different social forces have cast about for manipulating and transforming scalar relations thus the strategic deployment of scale and scalar relations by various actors, movements and organisations; however, they are weak in theorising the interactive relations between scalar structure and social struggles (Cox, 2010; MacLeod & Goodwin, 1999; Smith, 1992, 2002). Both schools acknowledge that scalar transformations occur through the spiral interactions between inherited scalar structures and the emergent, transforming regulatory projects and strategies (Brenner, 2001; MacKinnon, 2011). However, they fail to provide a practical exercisable framework to scrutinise the scalar interactions by jointly considering the inter-scalar interactions between actors and their interactive relations with the scalar structure.

2.4.1. *The debate of scale*

Scale has always been a core issue of geography research (Haggett et al., 1965). It reflects the human geography's general interest in socio-spatial dynamics. Traditionally, the geographical scale is regarded as a neutral metric of physical space and an inherent or defined platform or container for socio-economic activities (Smith, 1995), or as '*a nested hierarchy of bounded spaces of differing size, such as the local, regional, national and supranational*' (Delaney & Leitner, 1997, p. 93). But this kind of traditional Euclidian, Cartesian and Westphalian notions was criticised by Manuel Castells (1972), who pointed out that geographical scale should not be merely understood as the physical scope for social processes but is of critical social functions. Besides, Henri Lefebvre (1974)'s effort to redress the wrong perception and simplistic view of space in traditional social-political theories extended the concept of scale as historical constructed and would be transformed and restructured with the evolution of history and social development. In his view, the 'generalised explosion of spaces' at different scales resulted from '*the tension between globalisation and territorial re-differentiation*' (1974, p. 89-90).

The 'scalar turn' which took place in the 1990s deployed a social constructionist view to conceive scale as a presupposition, a complex media and an outcome of social relations (Brenner, 2000). Political-economic researchers like Harvey (1985), Smith (1992), Swyngedouw (1996, 1997) and Cox (1993) amongst others provoked the debate around the conceptualisation of scale and examined the social construction of scale through the strategies of various actors, movements and organisations. Main arguments of this so-called political-

economic approach consist of three aspects (MacKinnon, 2011). First and foremost, scales are non-fixed, and they are products of wider socio-economic, political and cultural processes rather than as pre-given, stable container within which such processes unfold (Brenner, 1998; Smith, 1992; Swyngedouw, 1997). Second, scale and scalar relations are relational concepts and should be viewed with regard to the condensation of contested processes of struggle (Brenner, 1998; MacLeod & Goodwin, 1999). They are '*embedded in the dynamics of social life rather than imposed externally*' (Howitt, 1993, p. 39) and are shaped by the processes of confrontation between empowered and disempowered actors (Cox, 2010; Smith, 1992, 1995; Smith & Dennis, 1987). Therefore, the agency has usually been a central theme of the research (Delaney & Leitner, 1997). Lastly, scales are historically produced and transformed. These transformations occur through the spiral interactions between inherited scalar structures and the emergent, transforming regulatory projects and strategies (Brenner, 2001). The periodic 'scalar fixes' only exist before transforming social practices as the outcomes of previous rounds of social construction (ibid).

Nevertheless, propositions raised by these political-economic geographers on the conceptualisation of scales has been criticised since the 2000s. The most severe criticism has been from post-structural researchers who aimed to develop a '*relational sense of space as open, multiple and becoming*' (Marston et al., 2005; Moore, 2008). The debate of scale was then heated with scholars holding different theoretical bases and views exploit each other's weakness (for a typical debate between scholars see Marston (2000); Marston et al. (2005); Marston and Smith (2001) and Brenner (2001)).

According to MacKinnon (2011) and Leitner and Miller (2007), post-structuralists' criticisms on the political-economic researches focused on three aspects. First, they tend to reify and essentialise scales (Kaiser & Nikiforova, 2008; Moore, 2008). They privilege scale over other spatial attributes, such as networks, space, place, region and mobility (Leitner & Miller, 2007), and sometimes even over the intrinsic social practice through which it is constitutionally produced and reproduced (Taylor, 1982). According to post-structuralists, geographic scales are socially constructed and that their precise manifestation cannot be viewed as pre-existing (Howitt, 1993). It should emerge as a dimension of contentious politics based on its empirical significance (Leitner et al., 2008). Second and relatedly, the political-economy literature tends to regard scales as 'conceptual given' and neglect the role of scalar practices and discourses (Marston et al., 2005). Therefore, the post-structural approaches called for the epistemological notion of scale and proposed scale to be a representational practice (Jones, 1998). Lastly, the

hierarchical, top-down notions of scale in political-economic literature shows causal processes as the broad scale (high level) ‘touching down’ locally (Leitner & Miller, 2007). Specifically, its discourses of globalisation tend to reify of the global scale and suppress the resistance from below (ibid).

Taking on board of the above claims, the research on scale has turned to a new direction. It attempts to combine and consolidate work on scalar practices and discourses (post-structural approaches) with a continuing focus on the material production of scale (political-economic approaches) (MacKinnon, 2011). The modified or ‘open political economy’, which gives thought to core criticisms of the post-structuralist research (Jessop et al., 2008; MacKinnon, 2011), addresses both epistemological and ontological dimensions of scale and scalar politics. The scalar structuration theory takes into account of scalar discourses and practices and believes that they will be institutionalised and absorbed within emerging scalar rearrangements and relations (the scalar structure) (Brenner, 2001). At the same time, it underlines that the scalar structure as well as the scalar discourses and practices are never fixed but are always subject to subsequent reengineering and transformation as they always encounter emergent social forces and practices (ibid).

Building on the debate and the conceptualisation of scale, the next two sections focus on the (open) political-economic literature and reviews its two branches respectively: the rescaling school and the politics of scale school. To some extent, the division of the two groups has a resonance for Brenner (2001)’s scalar structuration theory: the former focuses on the restructuring of the scalar structure whilst the latter corresponds to the interaction of agency. In Cox (2010)’s words, the former concentrates on the reengineering of particular orderings or hierarchies among geographic scales and how the scalar structure of the state get constructed, whilst the latter emphasises the politics through which actors engage with a specific scalar division of labour (of the state).

2.4.2. *State rescaling*

The (state) rescaling study concerns about the transformation and reconstruction of the state functions and power. Scholars such as Jessop (2000, 2004) and Brenner (2003, 2004a) caught sight of the ‘rise’ of the supranational and subnational scales and the ‘decline’ of the national scale. Still, contrary to the ‘hollowing out’ literature, they demonstrate that the reshuffle of power from the national to both supra- and sub-national scales represents a reallocation of state power rather than a weakening of the nation-state (Shin et al., 2015).

Early works on the rescaling of the state, derive from the prevalence of globalisation study and are deeply rooted in the neo-Marxism thesis (Harvey, 1985; Lefebvre, 1974) and are strongly influenced by the regulation approach (Jessop, 1990, 2000). They view globalisation as a simultaneous process of reterritorialisation of socioeconomic space and rescaling of political-institutional spaces (Brenner, 2003). Capital accumulation tends to eliminate historically specific territorial barriers, embodied as deterritorialisation. At the same time, to increase the frequency of capital turnover and to expand it to broader places in the world, capital also needs to resort to the production of relatively fixed and immobile socio-spatial configurations, which is known as the capital's moment of reterritorialisation (Harvey, 1985). Therefore, globalisation not only refers to the expansion of capital's spatial orbit but also to the construction of those relatively fixed spatial (large-scale) infrastructures, e.g., railways (including HSR), highways, airports and ICT networks that help accelerate the circulation and accumulation of capital (Brenner, 1999b). In the face of the new circumstances of capital circulation and competition, the state has also changed its way of regulation, embedded in its new scalar configurations of governance (Brenner, 1999b, 2004a). The double processes of capital spatial (re)configuration and state rescaling are illustrated in Figure 2-2.

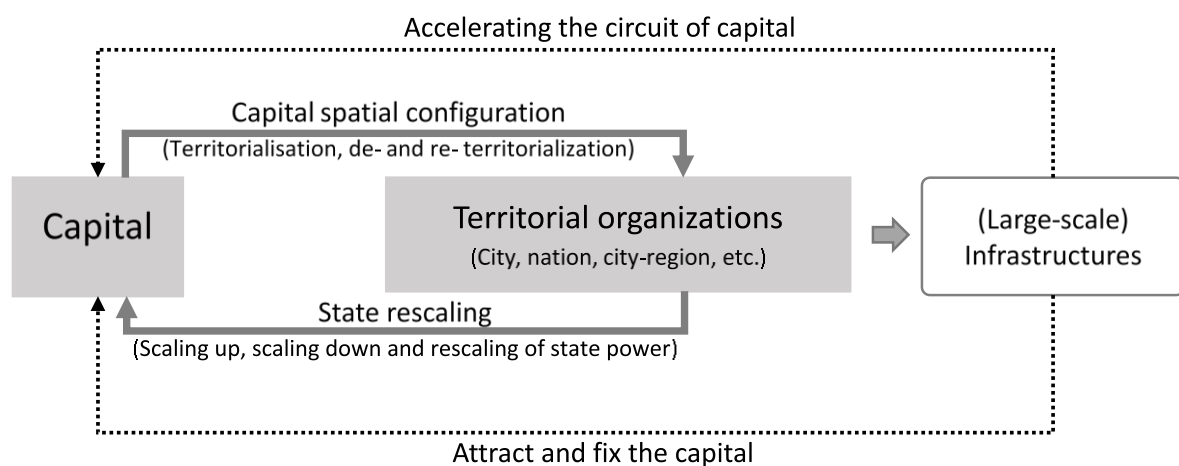


Figure 2-2. Capital spatial (re)configuration and state rescaling

Source: Author

Against the background of the triple processes of denationalisation (of the state), destatisation (of the political system or government to governance) and internationalisation (of policy regimes) (Jessop, 2002; MacLeod & Goodwin, 1999), rescaling scholars deem one of the

driving forces of state rescaling is the state's functional and institutional reaction to the evolving logic of capital accumulation, concerning the downfall of Fordism and the transformation from Keynesian welfare state to Schumpeterian competition state (Brenner, 2009; Jessop, 2000). Therefore, the state rescaling is theorised as the political-economic change in terms of the relationship between capital accumulation and its regulation, in forms of replacing the once dominating national state with more complex, overlapping scalar configurations of governance (Mansfield, 2005).

Another force of state rescaling comes from the spatial and scalar relations concerning regulatory processes, rather than the broader political and economic changes (Park, 2008). The heterogeneous interests and potential conflicts between the state actors at different scales (Cox, 1998, 2010) also result in regulatory attempts, called 'state project' (Jessop, 1990), to consolidate the individuals and groups within the state organisation.

Brenner (2004a)'s work offers important insights into the causes and mechanism of state rescaling. In his book, state spatiality is a concept developed upon the basis of 'strategic selectivity', an essential concept in strategic-relational approach raised by Jessop (1990). It intends to conceptualise the spatiality of the state in association with strategic interactions among different forces acting in and with the state, by using the example of post-war Western (Brenner, 2004a). According to him, the scalar structure of statehood is the outcome of a perpetual and spiral interplay between the inherited state scalar configurations and the emergent state spatial projects and strategies (ibid). State spatial projects and state spatial strategies are both regulatory policies aiming to modify or transform the entrenched spatial framework of the state. Still, they respond to the above two driving forces respectively: state spatial strategies respond to the wider political-economic challenges and aim at '*the geographies of industrial development, infrastructure investment, and socio-political struggle*' (Brenner, 2004a, p. 93) whilst state spatial projects '*are embodied in the state's internal scalar division among distinct tiers of administration*' (Brenner, 2004a, p. 92).

Swyngedouw (2000, 2004) contributes to our understanding of the form and consequence of rescaling. His word of 'glocalisation' demonstrates the twin process of socio-economic and institutional reconversion (Swyngedouw, 1997, 2004). He observed that both the institutional/regulatory arrangements and the economic activities and (industrial, service and financial) networks have synchronously rescaled from the national scale upwards and downwards to the supra-national and sub-national scales. It reveals that rescaling is not

monodirectional but a multidirectional process. Also, it is more important to detect the process and consequence of the rescaling at different scales than to inquire which scale(s) becomes dominating. Another significant contribution of his works is the revelation of the empower/disempower consequences of the rescaling process (Swyngedouw, 2000, 2004). The continuous reshuffle and reorganisation of spatial scales can strengthen the power and control of social and political actors at specific scales while disempowering others (Crow-Miller & Webber, 2017).

Although insightful, the theoretical framework of rescaling study has been challenged from three aspects of criticisms. First, most discussions on state rescaling focus on the forces that drive processes of re-scaling (Brenner, 1999a, 1999b, 2004b; Jessop, 2000) and the consequences of re-scaling (Brenner, 2004a; Swyngedouw, 1997, 2004). It offers little insight into how re-scaling actually occurs (Cox, 2010; Shin et al., 2015). Specifically, questions such as how scales are produced/restructured and given significance at any particular time and place and how do agents engage with one specific scalar division of labour of the state to resolve conflicts and to (re)negotiate are still not sufficiently answered. Second and relatedly, as the rescaling literature dissects the changes in the scalar structure, it concentrates on the material dimension of scale and neglects how do agents manoeuvre and take advantage of both the material and discursive dimensions of scale in pursuit of their interests (MacKinnon, 2011). Third, most rescaling researchers ostensibly attaches importance to economic regulation (MacLeavy & Harrison, 2010) though rescaling should not be reducible to political-economic processes. In fact, rescaling is '*[t]he integral part of social strategies and struggles for control and empowerment*' (Swyngedouw, 2004, p. 70), thus the outcomes of wider sociocracies processes.

2.4.3. Politics of scale

The literature on the politics of scale is agency oriented (Delaney & Leitner, 1997) and has moved the research focus from scalar restructuring (Brenner, 2004a; Swyngedouw, 1996) to the strategic manipulation of scale and scalar relations by various actors, movements and organisations (Cox, 2010; MacLeod & Goodwin, 1999; Smith, 1992, 2002). It has shed light on the '*diverse and concrete ways in which spatial and scalar restructuring of capitalist states takes place in various historical, political and social contexts*' (Park, 2008, p. 41). The politics of scale school thus has defended the political-economic study against post-structural critics by

highlighting interactions between multi-scalar actors and acknowledging both material and discursive meanings of the scale.

The term ‘politics of scale’ was firstly proposed by Smith (1984), aimed to decipher the social construction processes of scales. It described how actors mobilise powers and resources at various scales to frame their political claims (Swyngedouw, 1997). Another heuristic term, ‘scale jumping’, was also introduced to show the openness and fluidity of scale and scalar relations in the courses of power struggles, which indicates the expanding or diminishing of the scale of spatial control (political claims) over other scales in pursuit of their interests (MacKinnon, 2011). An example may be that, to legitimise the amendment of existing urban (master) plans, local governments may attempt to incorporate the change of plans with the national HSR station development projects. Thus, the local need for a change of plans has jumped to the national scale (see the cases in Chapter 5 and Chapter 7).

Rooted in the political-economic tradition and based on Smith’s works, Cox (1998, 2010) has developed a useful framework to understand and analyse the dynamics of the politics of scale. His framework is made up of a series of crucial concepts that denotes the critical moments and variables in scalar struggles, e.g., *place-dependent interests*, *space of dependence*, *space of engagement* and *networks of association*. Interests of multi-scalar actors are territorially defined and materialised at different scales, which are called, in Cox’s words, ‘place-dependent interests’ (1998, p. 5; 2010, p. 224) or ‘place-specific interests’ (2010, p. 219). ‘The space of dependence’ is defined by Cox (1998) as ‘*those more-or-less localized social relations upon which we depend for the realization of essential interests and for which there are no substitutes elsewhere*’ (p. 2) or ‘*a space within which it is possible to substitute one socio (-spatial) relation for another but beyond which such substitution is difficult if not impossible*’ (p. 5).

The politics of scale originates from the accumulation process and the inherent tension between the mobility and fixity of capital (Harvey, 1985). The de- and re-territorialisation processes (detailed in the state rescaling section) have witnessed multi-scalar actors’ (especially, state actors) struggles to enlarge their respective *place-dependent interests*, where scales have emerged as the sites for control and empowerment and the stand-off for cooperation and competition (Swyngedouw, 2008). *Place-dependent interests* are grounded on certain place-specific social relations, which are embedded in the *space of dependence* (Cox, 1993). Multi-scalar state actors tend to build growth coalitions with other place-dependent actors and carry out regulatory activities to enlarge their interests based on their scalar division of labour, that

is, '*the distribution of powers and responsibilities between the state and the various forms of local government*' (Cox, 2010, p. 216). Space of dependence thus can be positioned at various geographical scales, depending on the scales where the place-specific social practice unfolds. The uneven development across scales (Smith, 1984) and the tension-ridden nature of the accumulation process (Cox, 2010) indicate that the realisation of place-dependent interests at one scale may facilitate or hinder the creation or completion of the claims at a different scale, resulting in inter-scalar interactions or the politics of scale.

Strategies that multi-scalar actors can employ are twofold. On the one hand, they can build alliances/coalitions with other *place-dependent* actors within the same *space of dependence*. This is because, for a particular actor, there can be several spaces of dependence, which corresponds to different moments in the (spatial) accumulation process (Cox, 1998). For a district in the city, the construction of an HSR station in their jurisdiction may bring urban (re)development opportunities to them. But there is also a larger space of dependence defined at the city level since the external accessibilities for all the districts in the city are enhanced. On the other hand, place-dependent actors may also mobilise sources of power outside the space of dependence (Cox, 1998, 2010). *Networks of association* are mobilised to construct a 'space of engagement' within which '*the politics of securing a space of dependence unfolds*' (1998, p. 2). It is usually achieved through the politic of 'scale jumping', which may include making claims, changing organisational structures, or building alliances at other geographical scales (Underthun et al., 2011). The networks of association can be formal or informal connections, e.g., alumni networks, associations, business partner or personal connections (Park, 2003, 2008). They traverse various scales and are not contained to any single scale, which indicates the infinite and complex nature of socio-spatial relations (Underthun et al., 2011).

Bridged with the regulation studies (Jessop, 1990, 2000), Cox (2002) has found that territorial coalitions may be built to secure an existing space of dependence or to ensure a reinforced position in a wider geographic division of labour. When regulatory projects at different scales can promote each other in the sense of consistent/similar interests, the existing scalar structure is less likely to be challenged. On the contrary, when regulatory projects at different scales collide with one another, they become mutually restricting, which likely lead to rearticulation of the existing scalar structure (Park, 2008). According to Cox (1998), when the space of engagement is constructed, new scales are likely to emerge.

Cox's writings are criticised for insufficient attention paid to discourses through which the scalar materialisation of the state is constituted (MacLeod & Goodwin, 1999) and the primary focus on the 'upwards' movement of place-dependent actors (MacKinnon, 2011). These shortcomings are made up with findings from other studies, where both the materially and discursively (re)construction of scales and the bidirectional building of the space of engagement are recognised (Park, 2005, 2008; Shin et al., 2015). However, it does not mean his framework is faultless. As Cox (2010) put it, *'[his works] concentrated on the politics through which agents engage with a particular scalar division of labour of the state, and not with how that scalar division got constructed in the first place'* (p. 219). Consequently, the interactions between the scalar structure and politics of scale, i.e., scalar restructuring, need more methodological and conceptual attention (MacLeod & Goodwin, 1999). Besides, whereas 'inter-scalar tensions' have attracted much attention (Cox, 1998; Park, 2008; Swyngedouw, 1997), the concordant relations between scales are neglected comparatively. Scholars tend to take it for granted that no tensions between scales demonstrate the fastness of the existing scalar relation, which will further intensify the scalar structure (Shin et al., 2015). The seemingly self-evident argument has covered up the scalar politics under inter-scalar concordances, which thus calls for further investigation.

2.4.4. *Scalar politics and scalar structuration*

The (re)scaling school focuses on the perpetually redefined, contested and restructured scales of regulation/governance (state spatiality) (Brenner, 2001, 2004b; Jessop, 1990; Swyngedouw, 1996), but they are charged with reification (MacKinnon, 2011), and their grand narratives and historical periodisations fail to interpret the dynamics of actors and the inter-scalar interactions (Cox, 1993; Mansfield, 2005). On the contrary, the politics of scale school concentrates on how different social forces have cast about for manipulating and transforming scalar relations, that is, the strategic deployment of scale and scalar relations by various actors, movements and organisations. But they are weak in theorising the interactive relations between scalar structure and social struggles (Cox, 2010; MacLeod & Goodwin, 1999; Smith, 1992, 2002). It is thus necessary to bridge these two schools to reveal the whole scalar process of scalar structure (re)articulation and scalar interactions.

The combination of the two schools is not pure wishful thinking. Still, it has a theoretical basis, that is, the scalar structuration approach (Brenner, 2001) and the scalar politics approach, or the open political-economic approach (MacKinnon, 2011). Both methods acknowledge that

scalar transformations occur through the spiral interactions between inherited scalar structures and the emergent, transforming regulatory projects and strategies (Brenner, 2001; MacKinnon, 2011). In fact, they could be regarded as the efforts made by the rescaling school and the politics of scale school respectively to incorporate each other's methodological advantages and to improve their theories, despite they are not mutually exclusive and their joint 'opponents' are the poststructuralists (MacLeod & Goodwin, 1999; Mansfield, 2005; Marston, 2000). There are common grounds between the two approaches. Firstly, scalar structuration or scalar politics is a dimension of socio-spatial processes. In other words, political projects and initiatives have scalar aspects and repercussions, but scales may not be the centres of social practices. Secondly, existing scalar structures may constrain the subsequent evolution of scalar configurations, that is, path-dependent. This is because the fixed scalar structure may have supportive or restrictive implications on scalar interactions. Thirdly, scales and scalar relations can be strategically deployed by various actors, organisations and movements, and their political interactions will produce new scales and scalar relations. Lastly, the mutually transformative evolution of pre-existing scalar structures (can be temporarily sedimented and fixed) and emergent social activities are always emergent (Brenner, 2001; MacKinnon, 2011).

Despite the enlightening and strong explanatory and predictive power, both Brenner (2001) and MacKinnon (2011) fail to provide a practical exercisable framework with operational devices to scrutinise the scalar interactions by jointly considering the inter-scalar interactions between actors and their interactive relations with the scalar structure (Xu, 2017).

2.5. Infusing with Indigenous Chinese Governance Concepts

Increasing attention has been paid to the indigenous governance concepts, and the unique institutional structure in China as both rescaling and the politics of scale approaches have been applied in Chinese urban studies. Scholars argue that the unique institutional settings (e.g., the fragmented authoritarianism) and the indigenous governance concepts (e.g., *tiao-kuai*, *xitong*, administrative ranks, etc.) remain crucial when investigating the multi-scalar and multi-sector decision-making. Nevertheless, studies that have sufficiently coupled the Chinese concepts with Western theories are still limited, and those in the rail sector or the scalar politics domain are even rare.

2.5.1. *Fragmented authoritarianism and the tiao-kuai tensions*

Chinese politics has been known as the 'fragmented authoritarianism', which captures the bureaucratic bargaining nature of the Chinese political process (Lieberthal & Oksenberg, 1988).

During the procedures, central policies become increasingly malleable to the parochial organisational and political purposes of various vertical agencies and territorial organs in charge of policy implementation (Mertha, 2009). The result is that the seemingly authoritarian state actually applies decentralised decision-making (Clarke-Sather, 2019). At the core of the concept lies the tension between territorially (*kuai*, 块) and vertically (*tiao*, 条) organised state actors. The ‘*tiao-tiao*’ system ensured that local functions over various sectors were consistent with the superior authorities reaching down from the central ministries. The ‘*kuai-kuai*’ system guaranteed that each organ of the territorial government at the provincial, municipal or district level acted on the needs of the locality that it governed (Lieberthal & Lampton, 1992). Territorial governments are superior organisations to their functional departments in a leadership relation (*lingdao guanxi*, 领导关系), whilst superordinate and subordinate organisations within the same functional sector had a more circumscribed link than leadership, which is called professional guidance (*yewu zhidao*, 业务指导). Thus, local departments (e.g., land management bureaus and planning bureaus) have reporting responsibilities to both the central ministries and to the mayor of the city where they located (Hensengerth, 2015; Lieberthal & Oksenberg, 1988). The ‘*tiao-kuai*’ system ensured that local development plans would meet central policy requirements while maximising local interests.

The fragmented authoritarian framework has been widely applied in environmental governance, where two main streams of studies can be identified (Wang et al., 2018). On the one hand, in the decision-making processes, those previously marginalised actors, e.g., non-governmental organisations (NGOs), media, and the general public become able to insert their concerns into the central policies. On the other hand, local states’ opportunistic behaviours in policy implementation processes often result in poor coordination (with other state actors) and thus weak enforcement of the policies (Marks, 2010). Collectively, the two streams form the pluralisation trend in Chinese social-politics – the extensive involvement of non-state actors in the decision-making and the incremental intricacies of multi-scalar and multi-sector governance – result from contestations between functional agencies and territorial units (Wang et al., 2018).

Fragmented authoritarianism has its scalar meanings as the territorial organisations in China are highly daedal and mosaic, rather than neatly levelled in the nested hierarchies (Hensengerth, 2015). In an attempt to understand the complex interactions between those functional and territorial agencies, Xu and Yeh (2013) disassemble the railway regime into four institutional

dimensions, i.e., ‘*inter-ministry politics, interscalar relations, intercity politics and state-market relations*’ (in her later work, Xu (2017) only includes the first three dimensions to dissect the scalar politics in inter-city railway planning). Their frameworks highly accord with the fragmented authoritarianism, although in an implicit way.

The notion of the unique institutional settings is thus critical and indispensable for the examination of scalar politics in China. This is particularly important in the rail sector, of which the territorial units (*kuai-kuai*) are not incorporated into any levels of the local administrations, resulting in more fragmentation in decision-making. To be specific, the first kind of tension roots in the *tiao-tiao* set-up. The planning and investment of (both national and regional) railways projects require inter-ministerial networking, where the NDRC and other ministries negotiate towards a working consensus. Each of these central ministries concerns the policies and regulations for the sector in charge. Different opinions from various sectoral perspectives may result in complex inter-ministry politics as they are all constitutionally at the same administrative level, and no one can override the other (Xu & Yeh, 2013). The separation of MOR from the MOT makes the intermodal connection between the railway and other transport modes difficult (Li et al., 2014). Secondly, there are tensions between different tiers of governments, since state functions have been rearticulated downwards to the local and a new relationship of negotiated, non-hierarchical exchanges between institutions at different scales is emerging (Han, 2000; Wu & Gaubatz, 2013; Xu & Yeh, 2013). Thirdly, although there are territorial units (*kuai-kuai*), i.e., regional railway bureaus in the rail sector, none of them have been incorporated into any levels of local governments. The independent operation of the MOR and MOT together with the unintegrated ‘*tiao-kuai*’ system created obstacles for the integration of railway planning with other transportations and with urban planning (Yin-Nor, 2016; Yu, 2015). The idea of scalar politics, as an analytical framework, could not only conceptualise the tensions between territorially (*kuai*) and vertically (*tiao*) organised state actors but also shed light on the ‘establishing, changing, and confirming’ of the territorial hierarchy as well as the ‘power dynamics in relations of scale’ in China (Cartier, 2011, p. 14).

2.5.2. *Changing central-local relations and state power reshuffling*

The fragmented side of the term ‘fragmented authoritarianism’ has been elaborately discussed in detail, but it does not represent the whole picture of Chinese governance. The traditional central-local relation (*yangdi guanxi*, 央地关系) studies show that the power relations within the Chinese state have in recent decades experienced complex and profound changes in

(re)assignments of fiscal, resource control and public policy responsibilities (Lin & Zhang, 2015). The evolving central-local relation in China expressed itself not only in decentralisation but also recentralisation of the state power (Pan et al., 2017; Xu & Yeh, 2009).

Accompanying the phenomenal economic reform has been a profound reshuffle of state power towards decentralised decision-making (Han, 2000; Hsing, 2006; Wu & Gaubatz, 2013). The state has deregulated its dominance over the budget, investment, pricing, and the control of state-owned enterprises (SOE) (Huang et al., 2015). By separating land use rights from land ownership since the 1980s, the Chinese government also has established a new market for selling land use rights to the private sector directly (Lin & Ho, 2005). Consequently, the local government, instead of the central government, began to dominate the process of urban development in the post-reform era (Liu et al., 2012). In the process, the central and local governments have played divergent roles. The central government defined strategic development directions of industrialisation and urbanisation for the country, whilst local governments acted as the *de facto* decision-maker in the process (Liu et al., 2012).

Centralised revenue collection and the budgetary transfer was the main feature of the Chinese fiscal system before its reform in the 1980s. Local governments took charge of collecting various taxes and profits and would hand them over to the central government. The central government then transferred part of the revenue back to local governments based on their needs approved by the central (Pan et al., 2017). In the mid-1980s, the central government decentralised the financial revenue and expenditure power to the sub-national governments (i.e., provincial and municipal governments) to facilitate local urban and economic development (Ong, 2012). Local governments thus had the power and access to more financial resources and obtained higher rates of revenue sharing (Pan et al., 2017). But meanwhile, the local government were assigned more duties in financing and providing an enormous variety of public facilities and services, such as education and municipal infrastructure (Ong, 2012).

After fiscal reforms in the 1990s, the most munificent sources of budgetary revenue (e.g., personal and enterprise income taxes, value-added tax, and resource tax) was reconcentrated to the central government. As such, the central government's share of the total fiscal revenue increased from less than 30% in 1993 to around 50% in 2012 (Pan et al., 2017; Zheng, 2006). In parallel with the fiscal reforms, more financial autonomy and legitimacy in urban management and economic development had also been granted to the lower levels (He et al., 2016; Pan et al., 2017). Also, land and housing reform have commodified previously state-

owned land and housing properties. Through ‘*the land use control system*’ and ‘*the development control system*’ (Wu, 2006, p. 124), the *de facto* owners and regulator of critical urban resources (e.g., land and finance) – the local governments – became able to control the urban development directions while regulating land supply and the market behaviour of various actors (Wu, 2006). By 2008, land sale had taken up more than 30% of the total municipal fiscal revenue and had financed almost 40% of the overall cost of municipal facility maintenance and construction (Lin & Zhang, 2015). The massive reliance on land sale income inevitably led to the unprecedented rapid land urbanisation in China (He et al., 2016; Huang et al., 2015).

In the process, the control over local officials had never been eased (Li, 2010; Solnick, 1996). Through an elaborate hierarchical cadre assessment and management system, performance targets set at the central were passed down to the lower levels, even in the absence of direct central controls (Tsui & Wang, 2004). Political centralisation, economic decentralisation and fiscal reforms together resulted in intense competition among local states (Moore, 2014). Local officials thus were keen to boost economic development and remain competitive in the cut-throat competition with each other by converting agricultural land into urban uses (He et al., 2016). In the meantime, a gradual process of recentralising state power has been identified by studies of central-local relations (Xu & Yeh, 2009), indicating that the central government needs to reaffirm its functional importance given the complications caused by the decentralised and fragmented pattern of urban growth (Ngo et al., 2017). The recentralisation and the rearticulation of scales, however, should not be deemed as the inheritance of authoritarianism or the deformation of an earlier pattern but suggest the redefined nature of state intervention, that is, the imperative of market development (Xu & Yeh, 2009) and the subnational politics (Ngo et al., 2017).

2.5.3. *Administrative hierarchy and the evolving political geography*

Although studies on the central-local relations have primarily treated the state as a two-tier system, the state structure and scale relations in China is much more complicated. Another outstanding feature of the Chinese institutional setting is the seemingly nested but actually intricate administrative hierarchy, which has both territorial/spatial and political meanings (Cartier, 2004; Cartier, 2011; Chien, 2013). In spatial terms, it signifies the hierarchical power relations that exist between the central government and the various levels of local governments. In political terms, it emphasises the significance of the administrative status of state actors,

including not only multitier governments but also various state and non-state agencies, SOEs, etc., in the Chinese political economy.

Like many large countries, the administrative system in China is multilayered and hierarchical, but what distinguishes it from others is that the administrative hierarchies in China are not fixed nor neatly levelled (Cartier, 2011), though they are highly rigid and rank-based (Ma, 2005). Currently, there are four primary tiers of administration under the Chinese central state – province, prefecture, county and township level. But the actual institutional set-up goes beyond the four tiers. There are equivalent variations at each level, including four provincial cities (cities directly under the central government, or *zhixia shi*, 直辖市), five autonomous regions at the provincial level and countless urban districts, county-level cities at the county level (Jiang & Waley, 2020). There are also other administrative entities that sit in-between or even cannot be categorised to any of the four tiers, e.g., sub-provincial cities, cities with independent planning status (*jihua danlie shi*, 计划单列市) and the Special Economic Zone – Shenzhen. These various administrative territories are not all historically inherited but are constituted through political-economic events and decisions (Cartier, 2011). In fact, the *Constitution of China* does not specify ‘prefecture-level city’ and ‘county-level city’, indicating that many of the existing administrative territories are results of ‘*political manoeuvres in the local-central power dynamics behind administrative restructuring*’ (Chien, 2013, p. 110).

The Chinese administrative system has a rigid hierarchical structure, that is, the administrative rank (*xingzheng jibie*, 行政级别) of an area defines its political and economic power and shapes its relations with other places (Ma, 2005). Put population, territorial scope, and economical type aside, an area with a higher rank in the administrative system is likely to have more extraordinary ability to function its governmental competence and management of territorial space (ibid). Therefore, lower-level administrative units have the intention to increase their administrative ranks, e.g., from county to county-level city or prefecture-level city, or from prefecture-level city to sub-provincial city or provincial city. Not only the administrative ranks of a place but also its relations with other areas are also subject to changes. For example, Ma (2005) has identified three major strategies designed to change the subnational administrative system, i.e., ‘*converting entire counties to cities (xian gai shi, [县改市])*’, ‘*city administering counties (shi guan xian, [市管县])*’ and ‘*annexation of suburban counties by cities (che xian she qu, [撤县设区])*’ before the reform (p. 481), whilst Lu and Tsai

(2019) and Chien (2013) have detected the ‘counties administered directly by provinces (*sheng zhiguan xian*, 省直管县)’ in the post-reform era. The administrative hierarchy thus has served as the territorial and administrative basis of state organisation (Chien, 2013). Changes to the administrative hierarchy are subject to the shifting scalar strategies of the state, which also territorially mirrors the political economy of state actors (Cartier, 2011).

The administrative hierarchy in China also has political meanings as many territorial organisations and even institutions with no territorial dimension, e.g., SOEs, universities and banks, have administrative ranks, which is a historical legacy of the planned economy (Hensengerth, 2015; Jiang & Waley, 2020; Wang, 2016). The administrative rank of state, non-state and quasi-state actors in China is the crux in defining relationships of authority between them (Hensengerth, 2015). Its political implications are twofold. Firstly, different administrative ranks mean different negotiation power in decision-making. Therefore, equivalent administrative ranks assure equal status between multi-scalar actors, as ‘*units of equal rank cannot issue binding orders to each other*’ (Lieberthal & Oksenberg, 1988, p. 143). It also applies to negotiations between the state and SOEs. For example, the ministerial (provincial level) rank of the national railway company ensures that it still has the equal bargaining power with provinces after corporatisation. Secondly, cadres can serve both in the state and those quasi-state agencies as their administrative ranks are mutually recognised. Consequently, informal networks between institutions and individuals are easily created, which provides cross-sector and cross-scale links to do ‘scale jumping’ (Hensengerth, 2015; Smith, 1992).

According to Howitt (1993, 1998), scale is composed of at least three connotations (or has three metaphors), i.e., size, level and relation. The administrative hierarchy, which is the ‘institutional heart’ of the Chinese state (Cartier, 2011, p. 28), therefore, has vividly represented the latter two meanings (Ma, 2005). Besides, it provides a powerful perspective to investigate the decentralisation, marketisation, and spatial dimensions of state power (Cartier, 2011). Therefore, as Ma (2005) suggests, the administrative hierarchy, a key factor affecting China’s local space economy, should be conceived as ‘*a special type of scale*’ that needs to be incorporated in the theorisation of scale (p. 477).

Apart from the above discussions on the unique institutional settings (e.g., the fragmented authoritarianism) and the indigenous governance concepts (e.g., *tiao-kuai*, *xitong*, administrative ranks, etc.) in Chinese urban studies, there are other influencing factors of scalar

politics, among which *guanxi* (or personal ties) and international influences are remarkable. Hensengerth (2015) has observed the informal networks between hydro-power companies and various levels of governments in China, which are originated from the high-level personnel transfers between SOEs and government agencies. Those *guanxi*-based connections have leapt across the inherent hierarchy and helped those companies to evade environmental administrative sanctions against their operations. Zhao and Timothy (2015) have illustrated how *guanxi* is ‘initiated, built, or utilized by different levels of government in addition to their hierarchical power relations in red tourism development’ (p.498). However, *guanxi* is not necessarily used from bottom-up, the case of Chongqing Liangjiang shows how the New Area Administrative Committee relies on the local *guanxi* to implement specific instructions (Li, 2015). *Guanxi* thus provides an additional channel to mobilise power and build coalitions across scales in the Chinese scalar politics (Yang & Han, 2020). In addition to this, international players have now become an increasingly important part of urban governance in China. Their roles in urban development have been observed in various domains, e.g., property-led redevelopment (He & Wu, 2005), industrial parks (Miao, 2018), port management (Wang et al., 2004), economic development zones (Ngo et al., 2017) and environmental protection (He et al., 2015). They were thus bound with the intrinsic and intricate multi-scalar interactions in China. International players who have interests related with local projects may have to embed themselves into the networks of social and political relationships in China (Yeung, 2000) but could leverage international scale resources to shape the outcome of scalar politics (Fan, 2014).

2.6. Summary

HSR station planning is complicated because of the dual attributes of the station (i.e., node and place), the multi-stakeholder participation in the process, and the institutional and policy setup of the context (Bertolini, 1998; Bertolini & Spit, 2005). With the rising recognition of the multi-sector and multi-scalar decision-making of massive infrastructures (Romein et al., 2003; Salet et al., 2013; Vickerman, 2008), the literature on HSR station planning, however, is lopsided towards the study of the inter-sector interactions without adequate attention to the inter-scalar interactions. Besides, a scale-sensitive analytical framework with the ‘balanced theorisation’ of the three elements of the ‘planning triangle’ (i.e., object, process and context) (Bertolini & Spit, 2005; Hartmann & Geertman, 2016, p. 67) is still in urgent need for a throughout study of the interactive relations between the station space, the scalar structure and inter-scalar interactions.

Traditional transport planning literature concentrates on the nature and functions of the transport infrastructure (Curtis, 2016), whilst governance studies provide insights into the planning process and context. The cross-fertilising of the two is the key to realise the ‘balanced theorisation’. MLG and scale study are identified as the approaches that may be bridged with transport planning literature. Both methods have been applied in largescale (transport) infrastructure planning studies and show great potential in dissecting the inter-scalar dynamics (Li et al., 2014; Vickerman, 2008; Xu, 2017; Zanon, 2015).

A discussion of the MLG literature suggests that despite focusing on dynamics between levels and showing the high potential of multi-disciplinarity (Ansell & Torfing, 2016; Ongaro et al., 2010), MLG remains underdeveloped and fails to provide a practical framework to clearly predict or even explain the outcomes in the governing process (apart from the most general ones, e.g., governance overlaps and gaps). Furthermore, with the notion of pre-given levels as the locus of authority, MLG shows deficiency to work to correlate multi-scalar interactions with the changing institutional setup. But instead, it provides an essential context for the analysis of scalar politics.

The scale theory is methodologically superior and theoretically feasible. The rescaling school focuses on the perpetually redefined, contested and restructured scales of regulation/governance (state spatiality) (Brenner, 2001, 2004b; Jessop, 1990; Swyngedouw, 1996), whilst the politics of scale school concentrates on the strategic deployment of scale by various actors, movements and organisations (Cox, 2010; MacLeod & Goodwin, 1999; Smith, 1992, 2002). The theories that bridge the two approaches – scalar politics and scalar structuration – can contribute the aim of the enquiry, that is, an integrated analysis of both scalar structure and scalar interactions as well as their interplays. Nevertheless, a practical exercisable framework with operational devices to scrutinise scalar politics is not ready-made.

Furthermore, increasing attentions have been paid to the indigenous governance concepts, and the unique institutional structure in China as both rescaling and the politics of scale approaches have been applied in Chinese urban studies. Scholars argue that the unique institutional settings (e.g., the fragmented authoritarianism) and the indigenous governance concepts (e.g., *tiao-kuai*, *xitong*, administrative ranks, etc.) remain crucial when investigating the multi-scalar and multi-sector decision-making. Nevertheless, studies that have sufficiently coupled the Chinese concepts with Western theories are still limited, and those in the rail sector or the scalar politics domain are even rare.

A review of existing efforts on HSR station planning also suggests empirical gaps. Firstly, current studies fail to consider the ongoing institutional restructuring and the incremental policy changes (e.g., the rail system reform in China) which shifts the power, resources and mechanisms of HSR station planning. Secondly, empirical studies on inter-scalar interactions in HSR station planning in Wuhan is rare. Thirdly, current researches primarily focus on interactions in the station site selection process and few probes into the whole planning process, thus combining siting, intraurban transport planning and station area planning. Lastly, most studies use one single station or multiple stations from different cities to examine the planning process and few uses stations in the same city where the local institutional and social-economic contexts are the same.

3. Research Design

3.1. Introduction

This chapter discusses the research methodology in four sections. Section 3.2 presents the analytical framework that guides the inquiry. It shows how the key tools and variables that are identified in the literature review plausibly justify the scalar politics in the HSR station planning and development processes. This framework offers a big picture and a paradigm to identify a set of relationships among these critical variables. Section 3.3 outlines the inductive, qualitative, multiple-case-based research strategy adopted in the thesis. It explains why this strategy is appropriate for the study and presents the rationales for the selection of cases. Section 3.4 delineates the sources of data and outlines the methods and process of data collection. In addition, experiences throughout the data collection process are discussed accordingly. Section 3.5 discusses the data analysis approach. This section introduces how the initial data was processed and how the theory is developed following Bryman and Bell (2015)'s qualitative data analysis approach. The last section gives a summary of this chapter and restates the rationale and feasibility of the research design.

3.2. A Framework of Analysis

The conceptualisation of HSR stations' duality as *node* and *place* suggests that their planning and development involve multi-sector and multi-scale decision-making (Bertolini, 1996, 1998). The scale literature indicates that the scalar politics is an ongoing process of scalar structuration which involves not only the dynamics between multi-scalar actors but also the interactive relations between the existing scalar structure and the emergent scalar projects/strategies raised by the agency (Brenner, 2001, 2004a; MacKinnon, 2011). Nevertheless, the current literature has focused much on the inter-sector interplays in HSR station planning and development. Still, it is lopsided by a lack of understanding of the multi-scalar interactions. This leaves a theoretical gap about scalar politics and an empirical gap about how scalar politics have unfolded around HSR station planning and development. By combining the conceptualisation of the HSR stations and the theorisation of scalar politics, a scale-sensitive analytical framework is proposed to develop a 'balanced theorisation' (Hartmann & Geertman, 2016) of the interlocking relationships between HSR station area planning, development and the scalar structure as well as the inter-scalar interactions. It also responds to Bertolini (1998)'s call for a connection between the planning object with the planning process and context.

Figure 3-1 shows the conceptual framework guiding the inquiry. It concatenates the key variables and devices identified in the literature review chapter and aims to provide a new theoretical lens not only to interrogate the evolving scalar configuration and its facilitating/constraining functions but also to uncover the dynamics of the empowered/disempowered actors in the decision-making process. The core idea is that the planning and development of HSR stations are products of scalar politics incorporating both dynamics between multi-scalar actors and the interactive relations between the existing scalar structure and the emergent scalar projects/strategies raised by the agency. The scalar structure does not only define the scalar division of resources, responsibilities and power among multi-scalar actors (and thus facilitate/constrain their actions) but also raises different expectations towards the station projects. Multi-scalar actors deploy different strategies (competition, cooperation, or inactions) to effectively manipulate the discursive and material dimensions of scale in pursuit of their place-dependent interests. The interactions (competition and cooperation) and inactions between them finally lead to the planning and development outcomes (i.e., site selection, land use planning and transport connections). The realising/losing of interests of multi-scalar actors will turn into reinforcing/transforming forces to the existing scalar structure.

The three parts of inquiry in the analytical framework (denoted with the dotted boxes) correspond to the three core questions of the research, that is, (1) what kinds of institutional/policy settings are responsible for the complicated relationships alternating between confliction and cooperation among the various stakeholders in decision-making associated with HSR station planning and development? (2) how do stakeholders manage their resources, opportunities, and interests for cooperation with and competition against each other in the multi-scalar setting? (3) what planning outcomes can be observed and to what extent have the inter-scalar interactions impacted the existing scalar structure?

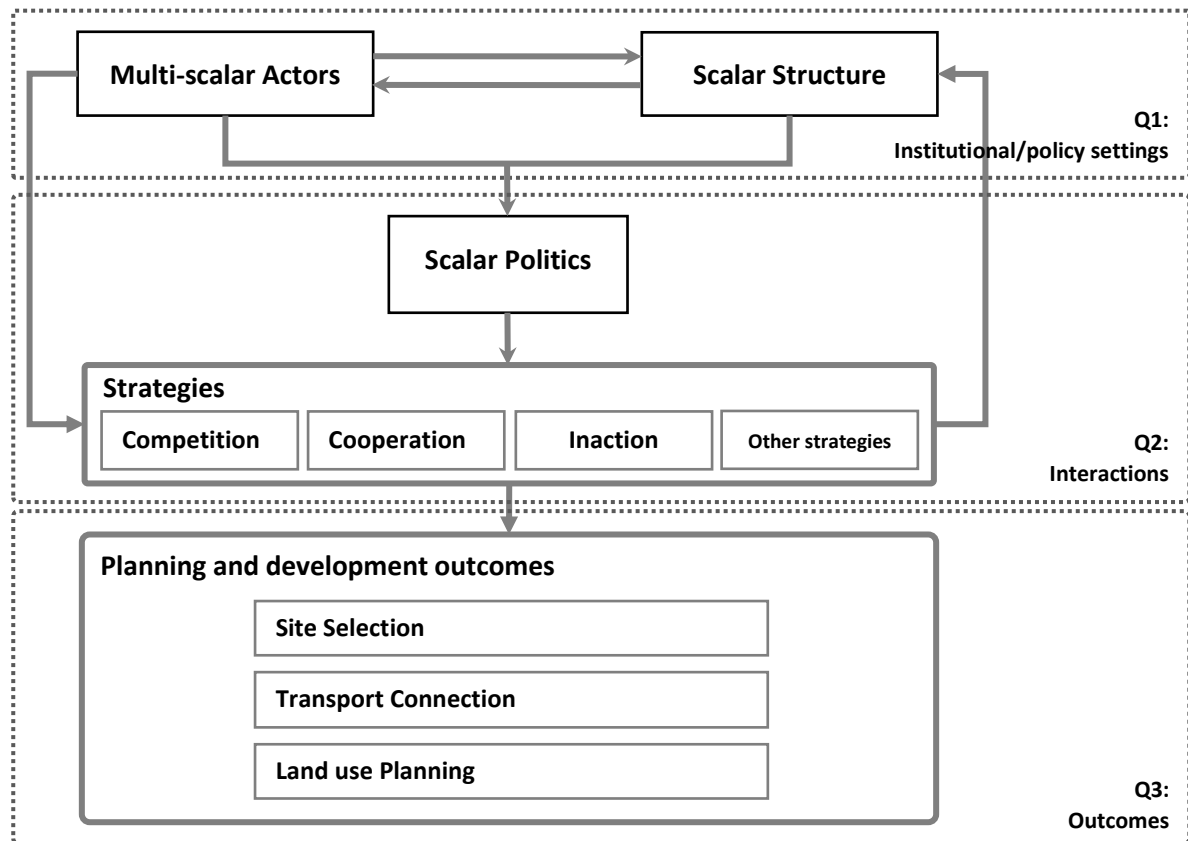


Figure 3-1. Scalar politics and HSR station planning and development – an analytical framework

Source: Author

3.2.1. Multi-scalar actors

The dual attributes of HSR stations with the potential to perform both *node* and *place* functions may lead to various pursuits from the development of the station and its vicinity. The broad national and regional anticipations and fragmented piecemeal local views will lead to conflicts and cooperation opportunities between different scales of authorities.

Multi-scalar expectations: Previous literature has observed the multi-faceted impact of HSR, e.g., transportation accessibility (Diao et al., 2017; Levinson, 2012), economic development (Han et al., 2012; Pol, 2003; Sands, 1993), land use changes (Murakami, 2010; Shen et al., 2016; Shen et al., 2014), environment changes (Albalade & Bel, 2012; Chen et al., 2016), and urban development (Garmendia et al., 2012; Loukaitou-Sideris et al., 2012; Monzón et al., 2013; Walt et al., 1991). These impacts are not restricted at specific scales but are dispersed at a broad range of scales (Yin et al., 2015). The empirical evidence ascertains multi-scalar actors' conviction of the driving forces of HSR. They believe the new or upgraded stations would

enhance the external links of their jurisdictions and the integration with other transports (e.g., air transport and intraurban transport). These expectations may go beyond the direct transport-related gains and encompass urban renewal and new town development desires.

Place-dependent interests: Interests of different actors are territorially defined and materialised at different scales (Cox, 1998, 2010). These interests are called, in Cox's words, 'place-dependent interests' (1998, p. 5; 2010, p. 224) or 'place-specific interests' (2010, p. 219). For governmental actors, these interests refer to the economic, financial, developmental and many other attractions that can be contained in their jurisdictions, e.g., tax base, FDI, infrastructure development, etc. (Park, 2007, 2008; Shin et al., 2015). Place-dependent interests of different actors may be concordant but are often conflicting with each other. The realisation/maximisation of place-dependent interests at one scale may undermine the interests at other scales. Also, the realisation/maximisation of place-dependent interests in a given aspect (e.g., transport) may damage the interests in other aspects (e.g., environmental protection). In China, the national HSR network is planned to enhance the accessibility between and within city-regions. But for some cities, especially large cities, the external links are more critical than intra-regional links. For others, the urban (re)development opportunities brought by stations may be more urgent than transport connections. The broad national/regional views and various piecemeal local views are attached to a given governance structure in any context, leading to conflicts and cooperation opportunities between different scales of authorities.

3.2.2. *Scalar structure*

Scalar structure: Scalar structure mainly refers to the scalar structure of the state, which is equivalent to the state's 'scalar division of labour' in Cox (2010, p. 219). It is embodied particularly in their territorial/administrative incarnations: the distribution of resources, powers and responsibilities between the central government and multilevel local governments – province, municipality, district, county, and township in China. It incorporates both formal and informal institutions. The scalar structure provides a crucial context for multi-stakeholder interactions, but itself is not fixed or stable. It can be temporarily sedimented but will perpetually interact with the emergent social activities. The scalar structure will cause conflicting or (temporarily) concordant scalar relations between multi-scalar stakeholders (Park, 2008). The reason is that both political projects or strategies and place-dependent interests can be defined and organised at different geographical scales, thus influencing one another, positively or negatively. It is, however, still unclear what kinds of institutional/policy

settings are responsible for interest entanglement among multi-scalar actors in HSR station planning and development.

Resources, responsibilities and rules: Resources that are necessary for HSR station planning can be divided into four categories: finance, land, knowledge, and proceedings (role in decision-making) (Pol, 2008). These resources are controlled by different authorities positioned at various scales. In China, financial input from Central Government and loans from state-owned banks make up the majority of HSR construction fund (Amos et al., 2010). Land as an essential local resource was provided by prefecture-level city (municipal) governments (Jin et al., 2014; Ollivier et al., 2014). The MOR holds the technical advantages in site selection, while the local governments have better knowledge about site circumstances and maintain a comprehensive outlook for urban development. There is an abundance of rules (e.g., policies, procedure guidelines and sectoral standards) to divide the responsibilities and guide the actions of actors at different scales. But these rules are never rigid and fixed as actors keep on mobilising resources and power to enlarge their interests (Park, 2008).

Formal and informal institutions: Under the given scalar settings (the scalar division of resources, responsibilities and the rules), each actor should fulfil their statutory roles in the HSR station planning decision-making. But in fact, HSR planning decision-making unfolds between multi-scalar actors and between formal and informal decision processes (Yang & Han, 2020). The unique institutional settings and the indigenous governance concepts in China remain crucial when investigating the multilevel decision-making there. Key concepts and institutional relations may include: (1) the tension between territorially (*kuai*, 块) and vertically (*tiao*, 条) organised authorities; (2) the tension between the central and local (*yangdi guanxi*, 央地关系); (3) the leadership relations (*lingdao guanxi*, 领导关系) between higher and lower-ranking units and the professional/business relations (*yewu guanxi*, 业务关系) between agencies in the same functional sectors; (4) the significance of administrative hierarchy and interagency relationships and; (5) the nature of the functional bureaucracies (*xitong*, 系统) (Hensengerth, 2015; Lieberthal & Oksenberg, 1988). Apart from them, there are also informal channels for communication between levels of authorities, e.g., personal connections or *guanxi* (关系). Key decision-makers at different scales may be connected by various personal links (Yang & Han, 2020). Both the formal and informal institutions may be used by actors to mobilise power and build coalitions to pursue their place-dependent interests.

3.2.3. *Scalar politics*

Inter-scalar interactions: Inter-scalar interactions refer to the cooperative and competitive interactions between multi-scalar actors with different *place-dependent interests* defined at different geographical scales. The term inter-scalar interaction does not imply that definitive scales themselves are interacting with one another, which will definitely fall into the trap of ‘reification’ (Marston et al., 2005). Instead, it holds the ‘open political economy view’ (MacKinnon, 2011, p. 23) that the interaction describes the process by which actors are interacting and negotiating with one another to protect or enhance their territorially defined interests (Shin et al., 2015). In the HSR station planning and development decision-making, various actors, organisations and movements use, manipulate and control both discursive and material dimensions of scale deftly in pursuit of their interests (Zhang et al., 2020). By distinguishing the pair of concepts (scalar structure and inter-scalar interactions), the decision-making process and institutional changes in HSR station would be highlighted and thoroughly dissected. However, the research would keep in mind the notion/concept of scalar structuration (Brenner, 2001, 2004a) which conveys the coinstantaneous processes of scalar restructuring (rearticulation of scalar structure) and scalar interactions.

Scalar strategy: Scalar strategies that place-dependent actors can apply may include *building coalitions* with other place-dependent actors that are in the ‘space of dependence’ and *mobilising power* outside the ‘space of dependence’ (Cox, 1998, 2010). Actors mobilise sources of power outside the ‘space of dependence’ to construct the ‘space of engagement’ (or ‘networks of association’) with which their *place-dependent interests* could be preserved (Cox, 1998). These scalar strategies demonstrate how multi-scalar actors, organisations and movements operate across different geographical scales (MacLeod & Goodwin, 1999). Both formal and informal channels may be manipulated. During the process, both scalar practices and discourses may be used to build the coalition, either within the existing ‘space of dependence’ or construct the new ‘space of engagement’ (Brenner, 2001; MacKinnon, 2011). Through the construction of ‘space of engagement’, new scales for regulation can be constructed, and both scalar practices and discourses are institutionalised.

Scalar restructuring: The planning and development of the station decides the manifestation of its functional duality (node and place functions), which finally determines the realisation of *place-dependent interests* at different scales. Realising/losing of interests will likely lead to uneven development and further cause regulatory deficit in the existing system (Park, 2008). It

may, therefore trigger new scalar fixes in the state (Cox, 1993). Existing scalar configurations will be enforced if regulatory projects at different scales are concordant with one another, whilst they are likely to be challenged when regulatory projects at different scales are mutually in conflict based on different territorially defined interests (Park, 2008). Scalar structure transformations occur through the spiral interaction between existing scalar structures and emergent, transforming regulatory projects and strategies (Brenner, 2001).

3.2.4. *Planning and development outcomes*

HSR station planning and development mainly incorporates three aspects, i.e., site selection, station area land use planning and connecting the station with intraurban transports. The planning outcome is also materialised and embodied in the three fields.

Site selection: The location of the station decides the accessibility and development potentials of the station project. For example, stations that are close to the urban centres can assure high accessibility and afford high density and diversity, leading to extensive land use; stations in peripheral new towns may bear (at least for the early stage) poor accessibility but can drive the development of the surrounding areas.

Transport connection: It refers to the link of the station with other transport, principally, the intraurban transport. The common means of transport that are incorporated into HSR stations include road traffic (e.g., private cars, buses, taxis and long-distance coaches), urban rail transit (e.g., metro, light rail transit and tram), and sometimes air traffic (e.g., the integration of HSR stations with airports).

Land use planning: It decides the land use types, development density and diversity in the station vicinity, which further defines the future economic activities and urban functions of the station area. It is closely bound up with the land development revenue.

Undoubtedly, the three aspects are closely interlocked. The location of the station determines the optional transport links to the station and the feasible land use plans, whilst the possible explorable sites and transport modes that can be linked to the proposed station also influences the site selection for the station. The development/realisation of the three aspects may come synchronously or by stages. In China, HSR stations are often constructed long before the municipal transport incorporation and station area development.

3.3. Multi-Case-Based Qualitative Research Strategy

3.3.1. Qualitative research strategy

This research questions the open, dynamic, and complex societal process of HSR station planning with particular attention to the scalar structure and interactions. The research strategy – the ‘*general orientation to the conduct of social research*’ (Bryman, 2012, p. 35) – adopted in this research, complies with the research questions and the main objectives of the study. The qualitative strategy has been selected on the basis that it is most appropriate for grasping the elusive characteristics of ‘scales’ and identifying the pertinent conditions, contexts, processes and consequences of the dynamics of actors (Creswell, 2009; Yin, 2013). Following the research strategy classification framework, the three philosophical considerations concerning this research are presented in Table 3-1.

Table 3-1. Three methodological orientations and qualitative strategy

Qualitative Strategy	Principal orientation to the role of theory with research	Epistemological orientation	Ontological orientation
	Inductive; generation of theory	Interpretivism	Constructionism

Source: Adopted from Bryman (2012)

The research rests its ontological orientation and principles on constructivism, which is consistent with the scale literature’s well known and recognised notion of the ‘social construction of scales and scalar relations’ (MacKinnon, 2011). In this regard, scales and scalar relations are not ontologically given; instead, they are constructed by and with the dynamics of social activities. It is the constructed social phenomenon and reality that this research attempts to interrogate. The epistemological belief of this research takes place in the contention that human efforts matter and ‘*emphasis on the ways in which individuals interpret their social world*’ (Bryman, 2012, p. 36). Therefore, particular social representations and discourses can be used to investigate the social decision-making process and scalar politics (MacKinnon, 2011). Interpretivism is adopted with the notion that the core of social science research is “*to gain access to people’s ‘common-sense thinking’ and hence to interpret their actions and their social world from their point of view*” (Bryman, 2012, p. 30). It requires the in-depth analysis and understanding of the qualitative data to realise a ‘causal explanation’ for scalar politics

interpretively. The research is undertaken inductively through extensive and iterative analysing of the qualitative empirical data, to generate and explore theories (Bryman, 2012). But, it is different from a purely inductive approach, which builds new theories only based on empirical observations (Glaser et al., 1968). This study uses the conceptual framework (see Section 3.2) generated from theoretical literature to guide the data collection and facilitates the analysis and explanation. But on the whole, this research is grounded on the empirical findings and observations, and explanations are drawn inductively (Strauss & Corbin, 1990).

3.3.2. Case study approach

A qualitative approach, including multiple case studies, is employed as the primary approach for investigation for three reasons. First, the research is about a dynamic, multifaceted and complicated process (large-scale urban and transportation project decision-making), which involves multiple participants and unfolds geographically diversely. It necessitates an in-depth analysis with much consideration of the context. The study of several cases, or even a single case, is conducive to an intensive study of a specific phenomenon within its ‘real-life context’ (Bryman, 2012; Yin, 2013). Second, the focus of this research is primarily on plans/planning, processes and actors rather than on measurable urban or regional economic developments. The quantitative analysis of large sets of statistical data is not suitable or even plausible, considering the elusive characteristics of scales and scalar relations (Flyvbjerg, 2006). An aggregate analysis of large sets of data may even filter out valuable details and useful subtleties (Trip, 2007). Third, a case study is mainly used to answer questions of ‘How’ and ‘Why’ (Yin, 2013), which is most appropriate for the proposed research.

Most studies on HSR planning use one single station or multiple stations but from different cities to examine the planning process; few studies use multiple stations in the same city where the institutional contexts and key actors are consistent. Wuhan provides such a perfect laboratory as there are in total three existing HSR stations (see the following section for a detailed demonstration). It offers an excellent opportunity to adopt a multiple case study approach to investigate inter-scalar interactions with different types of stations systematically. The three chosen stations are located at different economic-geographic positions, were/will be (re)developed at different times. Each station has its own node and place natures and may induce distinct modes of scalar politics. Every single case will reveal multiple observations on various applicable aspects of the issue rather than merely a single observation (Rueschemeyer, 2003). A detailed investigation of both intricate processes and relations is necessary for all

cases. A cross-case comparative analysis would help to achieve corroborative and reliable conclusions.

3.3.3. Selection of cases

Why Wuhan?

As aforementioned in the literature review chapter, city-region has become a ‘specific state spatial selectivity’ in contemporary China (Kennedy, 2017; Li & Wu, 2012; Ma & Wu, 2004; Wu, 2016), and multi-scalar governmental strategies lay particular stress on city-region development (Li & Wu, 2017; Xu, 2017; Xu & Yeh, 2013). Consequently, regional core cities have become the focus of negotiation and conflicts among multilevel authorities. Ideally, the research would be better conducted in a city with regional importance in terms of economy, political influence and notably, railway transport.

Wuhan was chosen for the research for four reasons. Firstly, Wuhan is the capital city of Hubei Province. The status of ‘sub-provincial city’ means Wuhan has a high level of (urban) developmental and economic autonomy which is equivalent down to a provincial level. Wuhan is one of the nine national central cities (*guojia zhongxin chengshi*) in China. Being at the top of the urban hierarchy in China, Wuhan has the potential and responsibility to act as both a gateway for the export-oriented economy and a locomotive for regional development. It is the largest city (both in terms of population and economy) in the middle reaches of the Yangtze River. Wuhan also acts as the fulcrum of industrial transfer from east-coastal regions to the west of China.

Secondly, Wuhan lies in the heart of the HSR network and acts as one of the major railway hub cities in China (Figure 3-2). It lies at the economic-geographic centre of China, and all main metropolises are enclosed within a 1,200 km radius circle centred on Wuhan. Historically, Wuhan was described as ‘*the Centre of the whole Empire, and the place from which it is easiest to keep a communication with the rest of the provinces*’ (Han & Wu, 2004). The strategic location of Wuhan has led to its unique position both in the historical and current railway networks in China. Currently, Wuhan is connected with more than 10 railway lines from 6 different directions and is going to join more passenger dedicated lines from 12 different directions in the future (National Development and Reform Commission, 2008, 2016a). As a city with a long history of railway development, Wuhan also places great expectations on HSR in the new era. The municipal government hopes to lift their economy (and urbanisation) and restore Wuhan’s place in China through the making of an HSR hub city.

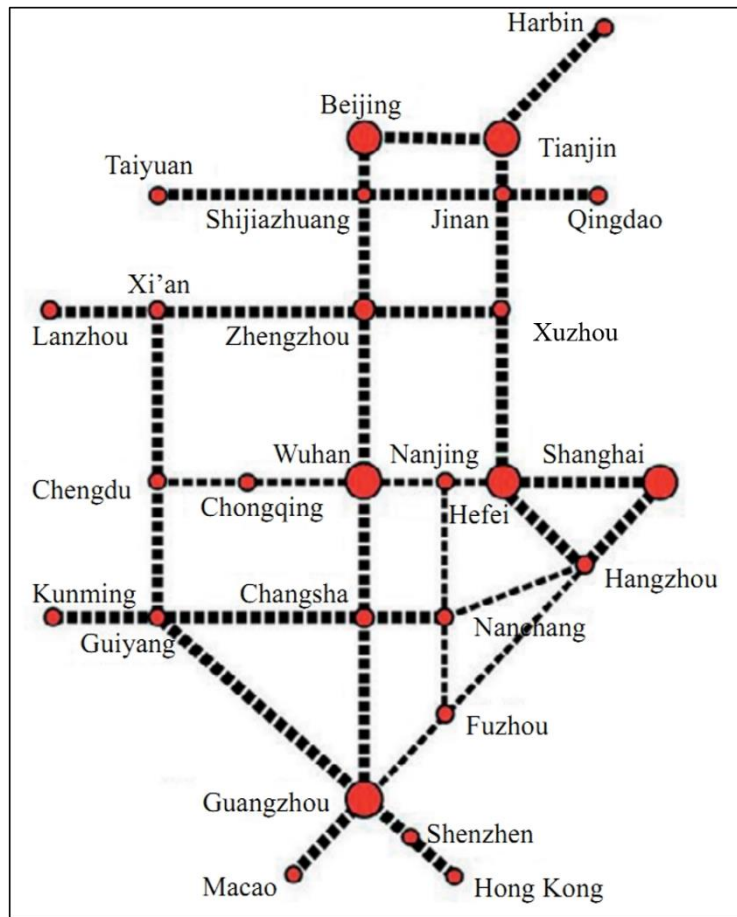


Figure 3-2. Conceptual HSR network in China

Source: Modified from Dai et al. (2013)

Thirdly, there are three running stations and one projected station in Wuhan that are all connected by HSR (Figure 3-3). Of the three existing stations, Wuchang Railway Station and Hankou Railway Station are both upgraded and redeveloped stations, whereas Wuhan Railway Station is a new one. Of all the four stations, Wuchang Railway Station and Hankou Railway Station are located in the downtown area, whilst Wuhan Railway Station sits in the edge of the city and the New Hanyang Railway Station, which is being planned is in the urban periphery. The fact that all heterogeneous HSR stations are from the same city offers a good foundation for comparison, excluding contextual disturbance factors. Besides, the three cases are not independent cases. They work together to present the scalar structure changes over time, as the three stations were planned and developed in different stages, and importantly, in the same city. This would not only provide ‘longitudinal cases’ for study, but also ensure a ‘theoretical replication’ (Yin, 2013). Therefore, the purpose of the selection of cases is to casually connect them, instead of accessing the cases in isolation or against one another. The connections

between the three cases would show the interactive relations between scalar structure and scalar politics.

Lastly, Wuhan is a typical regional core city in China. The construction of Metropolitan Wuhan, together with the development of national and regional HSR networks in Wuhan, perfectly represent the national strategy of mega city-region making and HSR development. The three case study stations are typical stations planned and developed in different stages, the study of which can reflect the facts of scalar politics in HSR station planning in China. Besides, the result of the case study will be further ‘analytically generalised’ by using theories, i.e., the conceptual framework proposed in Section 3.2 (Yin, 2013). Compared with other major city-regions in China (e.g., JJJ, YRD and PRD), the Wuhan metropolitan area is undergoing a process of rapid economic development, where heterogeneous policies intertwine simultaneously, and power adjustment and redistribution are prominent. Based on the above factors, Wuhan suits well for the research.

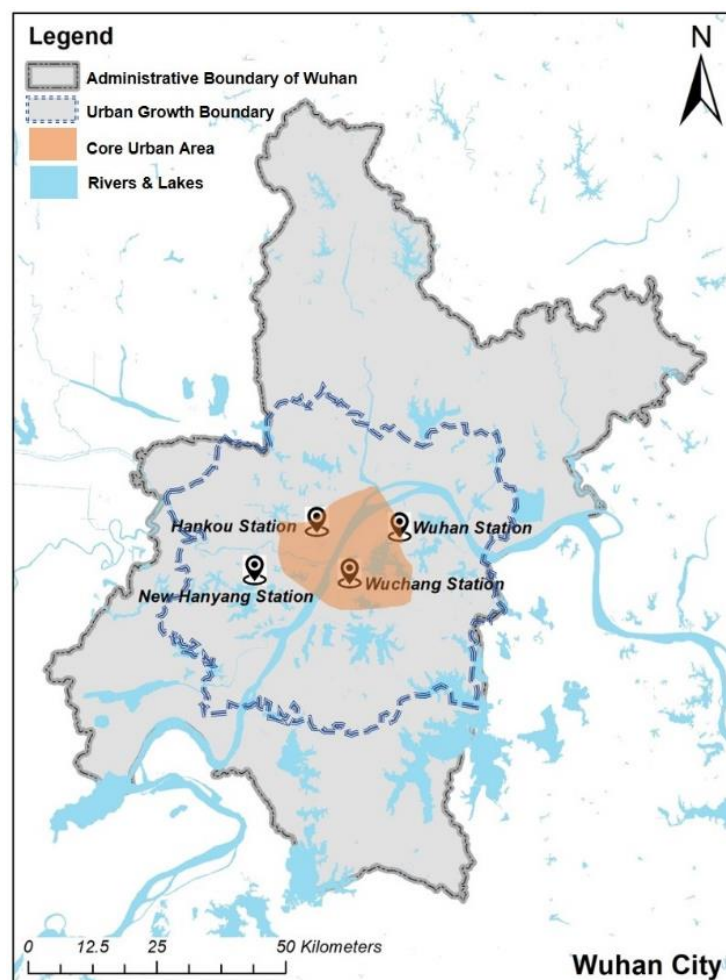


Figure 3-3. Railway stations in Wuhan

Source: Author

Why Wuhan Railway Station, Hankou Railway Station and New Hanyang Railway Station?

The selection criteria of stations mainly concern the locations of stations and whether they are newly built, upgraded or still under planning (Table 3-2). Also, the study tries to include all typical cases and avoid duplication. As a consequence, three HSR stations are chosen as the study cases of this research: Hankou Railway Station (an upgraded station located in the downtown area), Wuhan Railway Station (a newly-built station sits at the city edge) and the New Hanyang Railway Station (a station being planned in the urban periphery). Wuchang Railway Station is excluded, because it is a centred-located old station as Hankou Railway Station but with a smaller scale and fewer HSR lines pass by. The nature of stations demonstrates that each of them would function differently both in terms of *nodes* and *places*.

Table 3-2. Four main railway stations in Wuhan

Stations	(Re)build Year	Size	Location	With HSR Lines	Planned Area (1000 m ²)
New Hanyang	Under Planning	14 platforms 28 lines	Suburban	Yes	--
Wuhan	2009	11 platforms 20 lines	City edge	Yes	370
Hankou	2010	10 platforms 20 lines	City centre	Yes	193
Wuchang	2007	5 platforms 12 lines	City centre	Yes	49

Source: Summarised by the author based on the development plans of the four stations

Apart from the locational differences, the three stations are planned at different times with different policy and institutional settings. Wuhan Railway Station and Hankou Railway Station were (re)developed in the initial phase of HSR development in China when the projects were amply supported with funds. Their planning and development were initiated and dominated by the former Ministry of Railways (MOR). New Hanyang Railway Station is planned after the 2013 railway reform and is dominated by the state railway company – the China Railways Corporation (CRC). The change of participants and the scalar structure provides different modes of scalar politics in station planning.

3.4. Data Collection

Documents, semi-structured interviews, and non-participant observation are the major methods adopted in the study for data collection. Diversified sources of data were collected through these approaches³. Table 3-3 and Figure 3-4 report data sources and application strategies. Key government documents, including laws, regulations, industrial standards and institution mandates, reveal the statutory duties of actors from multiple scales.

Table 3-3. Sources of data

Sources of Primary Data (Interviews and Observations)	Sources of Secondary Data (Documentary Materials)
<u>Interviews</u> - Officials from multilevel governments - Representatives from the China Railway Company - Urban Planners - Transportation Planners - Representatives from developers - Officials from local village collectives - Representatives of the sitting tenants – farmers <u>Observations</u> - Spatial outcomes - Land use outcomes - Business in the station area - Transportation networking	<u>Key Laws and Policies</u> - Urban and Rural Planning Law of PRC. - The State Council's Guidance on the Implementation of Land Comprehensive Development in Railway Construction - Medium and Long-term Development Plan for Chinese Railway Network, 2016 <u>Government Authority Documents</u> - Minutes of meetings - Contracts with private sectors - Relocation and compensation contracts between developers and residents - Land transfer agreements <u>Plans</u> - Wuhan 2049, Long-term Perspective Strategic Development Plan - Urban master plans - Urban land use plans - Urban master plans and district plans - Industry & function zoning plans - Transportation networking plans - Station (re)development project plans <u>Maps</u> - Planning maps - Land use maps - Google earth /Baidu maps - POI data - 'Map World' data <u>Other Sources</u> - Media reports - Existing literature - Statistics

Source: Author

³ This research was conducted in accordance with the human research guidelines of the University of Melbourne and the University's Code of Conduct for Research. The research design, and especially the data collection and analysis designs were reviewed and approved by the University's Human Ethics Advisory Group before implementation. The research was undertaken in strict accordance with the approved protocol and relevant laws, regulations and guidelines.

Although multi-scalar actors' role played, in reality, may not be the same as their statutory mandates, extensive documentary analyses help to explain actors' strategies and motivations. Therefore, the answers to Question One could be achieved. Semi-structured interviews provide the opportunity to gain insight into the cooperation, negotiation and collision of multi-scalar participants in the planning processes, as well as their roles, motivations and rationales. Accordingly, Question Two is solved. Observation is necessary to investigate the planning and development outcomes. Besides, plans (station plans, zoning plans, land use plans, traffic organisation plans, etc.) and other documents (project designs, contracts with the private sector, minutes of meetings, etc.) are also the results of actors' interactions. These materials help to answer Question Three. Any source of data will not be limited to a specific research question, and they were cross used to obtain a solid and unbiased conclusion.

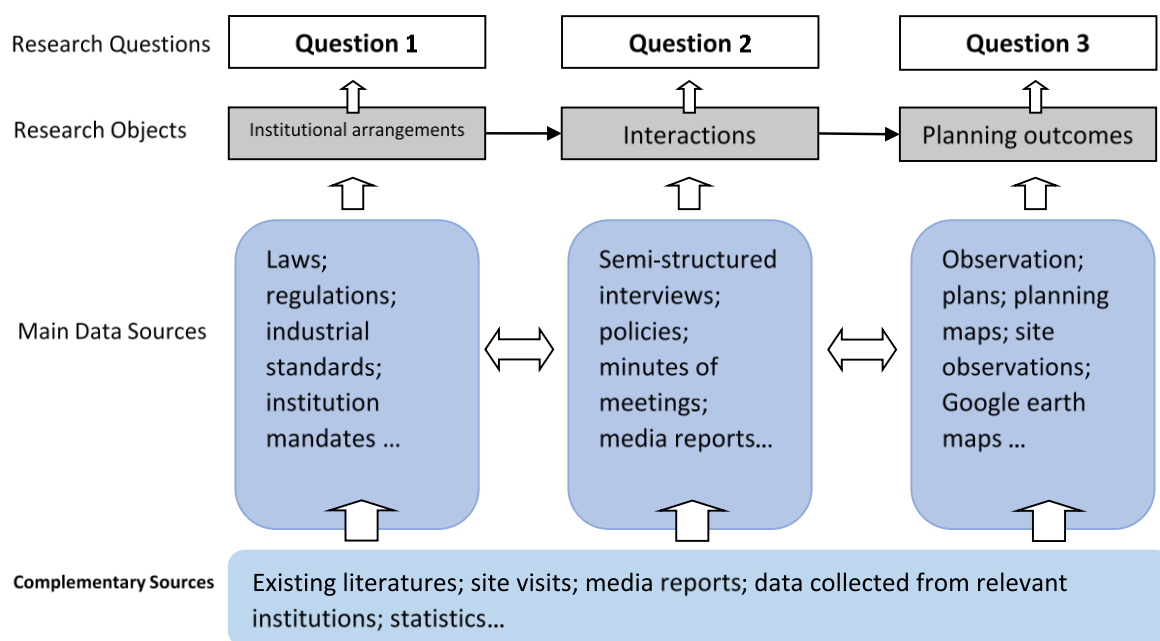


Figure 3-4. Data sources and the application strategies

Source: Author

3.4.1. *Semi-structured interviews*

Two rounds of fieldwork for this study were carried out in November 2017 and in May and June 2018. Follow up phone calls were made to several interviewees occasionally in 2019 and 2020 based on the built relationships with the interviewees. They serve the purpose to check any needs of future data collections, and more importantly, to understand the progress of the

planning of the New Hanyang Railway Station. The design and conduct of the interview were informed by preliminary analysis of academic and archival materials to provide an understanding of Wuhan's historical planning of railway stations.

Interviewees were identified through snowball sampling but were purposely selected following two criteria: (a) their participation and their influence in the planning process; (b) the scale or administrative ranks of their organisations. Since the researcher has more than three years' working experience in the former Ministry of Land and Resources in China and has participated in similar research projects, representatives from governments, planning institutions and the railway company are invited to take part in the interviews through personal networks. In total, forty-one carefully selected officials, planners, and developers from organisations at central, provincial and local scales (both the municipal and district levels) that are involved in the projects are interviewed (Table 3-4). The semi-structured interviews were carried out either in the key informants' office or a public place near their workplace. Each session lasted 30 to 120 min. A list of questions was used to guide the interview (Appendix A). The questions focus on the objectives, planning principles and purposes of the project, the planning and development processes, and especially concerning the multi-scalar interactions, e.g., the conflicts, agreements and way to cope with other actors.

Table 3-4. Attributes of interviewees

Organisation Tier/ Attributes	Organisation Type	Role	Number of Participants
Central level	China Railway (former Ministry of Railways)	Railway plan making & project evaluation	1
	Ministry of Natural Resources (former MLR)	Land use policymaking & plan approval	2
Local level	Department of Land Management of Hubei Province	Land use management; railway development support	1
	Wuhan Municipal Government	Local development management	1
	Municipal Planning Bureau	Transportation planning, land use planning and urban planning	8
	Municipal Planning Institute	Urban plan making & suggesting	13
	Municipal land Consolidation & Reserve Agency	Land consolidation & reserve; municipal infrastructure providing	2
Subordinate institutions of the former MOR at the local level	Railway Survey and Design Institute	Railway hub planning, engineering, routing & site selection	7
	Wuhan Railway Bureau	Rail service providing & station management	1

Private sector	Developers	Developers participated in station area development & developers quit the project bidding	3
Academics	Universities	Railway station planning researchers & railway plan making consultants	2
Total			41

Source: Author

Figure 3-5 shows the range of interviewees. Informants in this research consist of government officials, planners, representatives from the railway company, developers and academics. The broad coverage of interviewees at different scales (from central to local) helps to discover the actual interaction of multi-scalar interactions. The involvement of both urban and transport planning participants also enhances the validity of the interviews and assist the identifying of the stations' node and place functions (Bertolini, 1996). The semi-structured interviews were carried out based on a concise outline of interviews, and some of them are tapped with the informant's consent. Therefore, flexible, iterative and continuous interviews and discussion were conducted (Bryman, 2012), trying to cover background knowledge and useful supplementary additional information while still keeping the talks within the research range and scope (Trip, 2007).

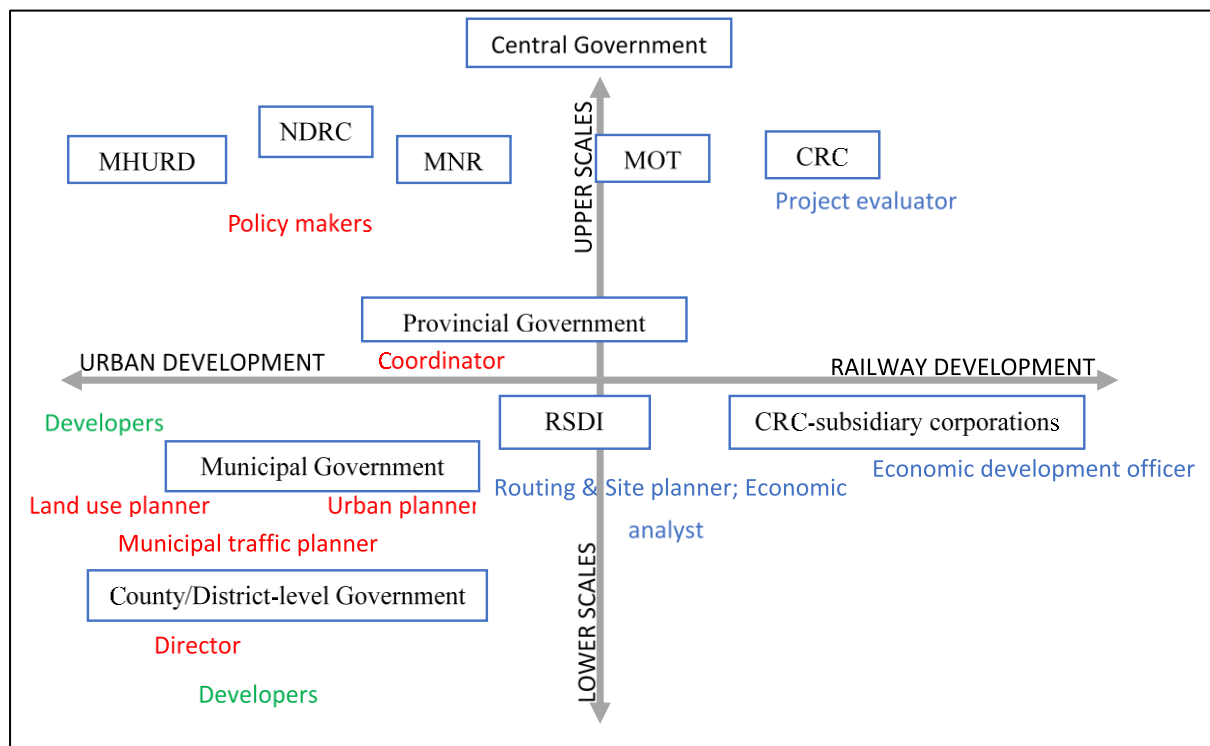


Figure 3-5. Interviewees by role, actor category and scale of organisation

Source: Author

3.4.2. Archival data

Documentary materials include key state documents and policy papers related to the HSR planning/development and the three stations, issued by multi-scalar entities of the government, including CR, former MOR, NDRC, MLR, the State Council, Hubei Provincial Government and Wuhan Municipal Government. Some of these documents are readily available in their original Chinese versions through various government websites, whilst others are collected from key informants during the face-to-face interviews. In total, fifty-two key government documents (see Appendix C) were examined thoroughly. Chinese governmental documents are marked by ‘stretching to great lengths and sloganeering empty rhetoric’ (Yin-Nor, 2016, p. 20). The researcher’s previous working experiences in the government, together with repeated and persistent discussions with informants ensured that these documents are fully interpreted and well understood. The study also included an intensive analysis of more than 90 media reports/articles published in Chinese on the three stations from national and local newspapers between 1990 to 2020. Some interviewees also provided or informed both non-academic and academic (journal) articles written by themselves or their colleagues that reveal the abandoned and applied planning schemes of the three stations.

3.4.3. Non-participant observations

During the two rounds of fieldwork, the researcher also visited the three stations via different transport means, aiming to examine the accessibility and interconnection with other transports. Location of the station along with land use, the status of development, and traffic organisation of the station area were primary foci of the field observations. Both photos and notes were taken during the field observations.

3.4.4. Complementary sources

To build a reliable database for the analysis, some other sources of data, including existing literature, online media, statistics, and data provided by relevant institutions/informants were also applied (Table 3-3).

3.5. Data Analysis

Raw data collected from in-depth interviews, maps, documents and observations were managed and analysed, adopting the ‘grounded theory’ approach (Glaser et al., 1968). Data from interviews were transcribed and translated into English. Spatial data, such as maps, were further coped with graphic processing software (e.g., ArcMap) to visualise better and track the

transformation and functional partitioning of HSR station areas. All the textual data was coded and categorised both manually and with the help of NVivo, a computer-assisted qualitative data analysis software, to induce concepts and categories for in-depth analyses. Relationships between categories were then detected, and therefore, preliminary hypotheses were raised. It was an iterative process between data collection and data analysis. With supplementation of further collected data (sometimes through gathering of secondary data and sometimes through follow-up phone calls or chatting software) or reanalysis of existing data, hypotheses were tested to form a substantive theory (Figure 3-6). At each step, the scalar structure (changes), strategies, interactions and their impacts are the core analysis targets. The narrative analysis approach (Bryman, 2012) was adopted to figure out the rationale and interactions among different actors, averting the failure to grasp the whole context and narrative flow of each case. By comparing and collating data from multiple sources, the planning processes were restored to the utmost extent and the logic behind stakeholders' behaviours were analysed.

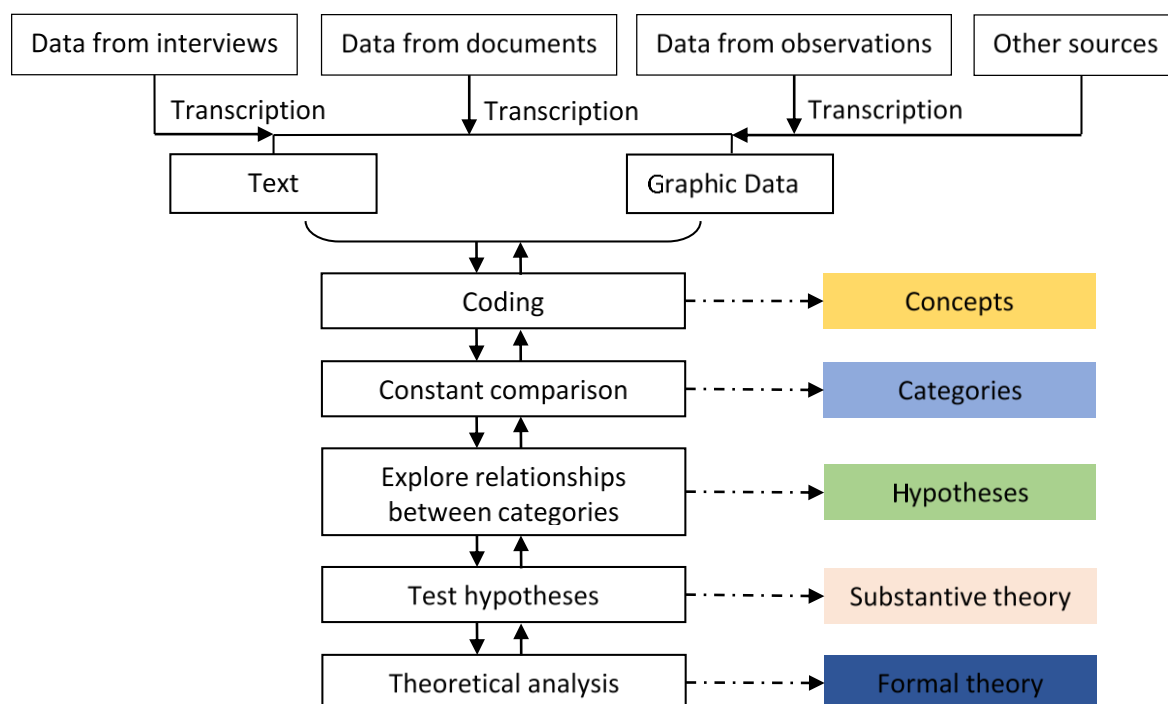


Figure 3-6. Flow of data analysis

Source: Summarised from Bryman (2012)

As there are three study cases in the research, after the investigation of each case, a cross-case analysis to synthesise the similarities and differences between them was conducted. As

mentioned earlier, every single case study reveals multiple observations on different applicable aspects of the case rather than merely a single observation (Rueschemeyer, 2003), and a detailed investigation of both intricate processes and relations was carried out. It was a ‘progressive focusing’ analysis process (Stake, 1995) as the inquiries and explanations sometimes evolved during the interpretation of the cases.

3.6. Summary

This chapter has specified the analytical framework, research strategy, data sources, collection methods, processing approaches and procedure. The analytical framework was proposed to investigate the interlocking relationships between HSR station area planning, development and the scalar structure as well as the inter-scalar interactions. The conceptual framework sketches out the scalar politics in HSR station planning decision-making and disassembles the dynamics with concrete analytical devices that can be used to dissect the process. Also, it entrenches the abstract scale theory with grounded facts in HSR station planning. The framework guides and facilitates empirical studies in the following chapters.

This study adopted a multi-case-based qualitative strategy. Three HSR stations in the city of Wuhan were selected to address the three research questions and the identified theoretical and practical concerns on inter-scalar interactions in the HSR station planning decision-making. Wuhan was chosen for its strategic role in the Chinese railway (and HSR) network and its political and economic importance to China. Content analysis, semi-structured interviews, and non-participant observation are the main methods adopted in the study for data collection. Each of them targeted at answering one of the three research questions, but none of them was limited to a specific research question. Multiple sources of data were cross used to restore the planning process and to obtain a reliable and unbiased conclusion. The ‘grounded theory’ approach was adopted to transcribe, code, categorise, and analyse the data gathered from various sources.

4. Changing Scalar Structure and the Emerging City-region

4.1. Introduction

This chapter provides a foundation for understanding the empirical chapters in 5-7. It has three sections on the changing scalar structure of HSR station planning in China (4.2 to 4.4) and one section (4.5) on the regional role of the study area – Wuhan. The discussion not only establishes the context of HSR station planning for case study analyses, but it also provides a thorough understanding of the institutional and policy conditions. These are crucial contents because the scalar division of labour and the rules mould (and at the same time are fused by) the planning and development processes (Giddens, 1984; Healey, 1992) and the rescaling process is highly path-dependent (Brenner, 2001, 2009). This chapter presents one of the dual dimensions of *scalar politics* (or *scalar structuration*) (Brenner, 2001; MacKinnon, 2011), thus the changing scalar structure of the scalar politics in the HSR planning in China.

Discussion on the changing scalar structure begins with an exposition of the institutional and policy settings for railway planning in the pre-HSR era. This exposition establishes an overall picture of the long-standing, typical and traditional railway regime in China, documents the institutional reforms (scalar restructuring) within the railway sector and, identifies potential dilemmas in station space planning. Section 4.3 continues with an investigation of the institutional arrangements and the policy orientations in the initial stage of HSR planning and development. The changes in the scalar division of power and the accumulated risks are also presented in this section. Section 4.4 scans the scalar restructuring in the railway system after the *2013 Railway Reform* (detailed later in this section). In supporting the marketisation of the railway authority, a series of policies in terms of land use management and station planning is released. These policy initiatives triggered another round of empowering and disempowering among multi-scalar actors, which inevitably lead to complexities in station space planning.

Section 4.5 zooms into the study area of the thesis, Wuhan, which is a typical regional core city in China. The construction of Metropolitan Wuhan, together with the development of national and regional HSR networks in Wuhan, perfectly represent the national strategy of mega city-region making and HSR development. A detailed context setting of HSR stations in Wuhan well supports further analyses of the three cases in the following chapters. Lastly, the chapter concludes by highlighting the institutional and policy context and the ongoing scalar restructuring in the production of HSR stations in Wuhan.

4.2. Pre-HSR Era: Placing Power in the Independent Kingdom

This section begins with a chronological analysis of the changing scalar structures in the Chinese railway planning regime, with a focus on the geographies of power among multi-scalar governments and railway authorities. It is divergent from the existing Chinese railway reform literature (Tjia, 2019; Wu & Nash, 2000; Yin-Nor, 2016; Yu, 2015), which pays close attention to the railway system per se and fails to take into account the changing power relations between the railway authorities and local governments (mostly in HSR station planning decision-making). The scalar structure discussion in this chapter, therefore, fills in the gap and focuses on the station planning-related issues. Problems like engineering, construction and system operation are excluded from the discussion. The reform of the Ministry of Railways (MOR) is regarded as the Central Government's spatial project (Brenner, 2004a) targeting at separating the government from railway business operations and relaxing state control, which results in complex empowering and disempowering scalar dynamics.

Three stages are identified: the pre-HSR era, the leapfrog development era and the post-railway reform era. The first stage started from the 1950s when the MOR was firstly established to 2003 when the long-prepared vertical reform was halted, and large-scale HSR development started. The second stage refers to the initial period of HSR development in China. It ended in 2013 when the former MOR was dismantled. The last stage denotes the scalar changes ever since the reform in 2013. It is worth mentioning that the three phases are not equally/evenly divided in terms of time range but aim to highlight the major scalar structure changes in station planning decision-making. This section focuses on the first stage, whilst the other two phases are presented in the following sections.

4.2.1. Formation of the railway kingdom

The railway sector in China had long been owned, operated and supervised by the Central Government through the agency of the former MOR before it was dismantled in 2013. The MOR, usually termed as '*the last fortress of China's planned economy*' and a legacy of the old Soviet-style system, had extensive powers in initiating, planning and constructing railway infrastructure and the introduction and localisation of crucial railway technologies (e.g., HSR) (Yin-Nor, 2016; Yu, 2015). The MOR even had its own railway police force, prosecutor office and court system and was completely independent of the Ministry of Transport (MOT) (Dai, 2015). It acted as a roadblock to the construction of a modern and comprehensive transportation network integrating road, railway, water, air and other transport means (Yu, 2015). Due to its

absolute monopoly power in the railway industry, the MOR was given many nicknames, such as the ‘Independent Kingdom’ and ‘Boss Rail’ (*tie lao da*, 铁老大). The formation process of this independent kingdom and the changes in institutional settings and financial operation of the MOR are the underlying considerations for taking the scalar strategies.

MOR was founded in 1949, soon after the establishment of the People’s Republic of China. The purpose for setting up a ministry in charge of the railway sector in the central government was to reaffirm and strengthen the ownership and operation of the then regionally compartmentalised railway sector to conduct an overall arrangement of the national passenger and freight transportation (Zhang et al., 2020). Also, it would secure the military use, which had top priority for the new China in its first two decades (Yu, 2015). MOR took charge of railway construction and accelerated the pavement of railway lines. For example, 6,100 km new lines were constructed during the First Five-Year Plan period (1953–1957) (Tang et al., 2011). MOR was removed and incorporated into the MOT from 1970 to 1975 but became independent of the MOT as a result of poor inter-departmental coordination (Yu, 2015). Since then, the MOR had augmented its monopoly in the railway sector gradually. As such, it took charge of not only the operation and construction of railways but also the monitoring of train safety and railway business management (ibid). The railway sector in China was then under total national control, with a tiny fraction of railway transport being operated by local companies which were co-funded by provinces and the MOR. An independent railway kingdom was gradually formed.

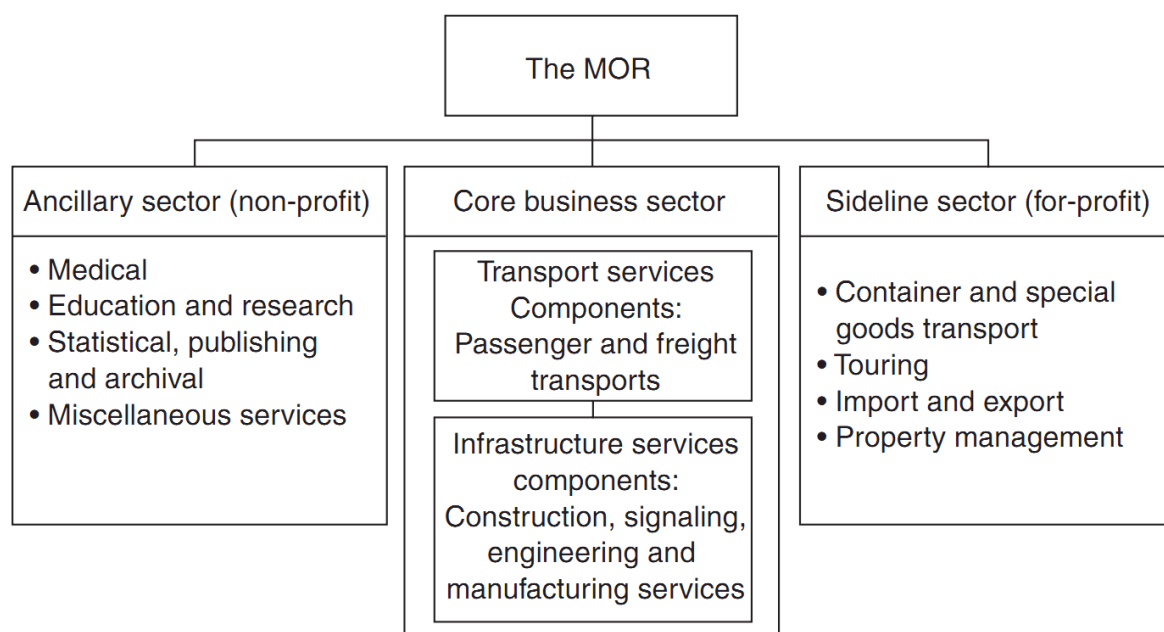


Figure 4-1. Functional components of the MOR

Source: Yin-Nor (2016, p. 63)

By 1999, the MOR had evolved into a ‘self-contained mini-society’ (*xiao shehui*, 小社会). Apart from its core business sectors (transport service and infrastructure construction), it also ran sideline business and many non-profit sectors, such as universities, hospitals and publishing houses (Figure 4-1). Such a gigantic all-embracing organisation and the accompanying complex structure and interlocking bureaucratic coordination created considerable complexity and inefficiency in the railway regime. In response to the nation’s strategy to cut the number of state employees in the late 1990s, the MOR started to offload and streamline its business. In 2000, five railway-related enterprises – the China Railway Engineering Corporation, the China Railway Construction Corporation, the China Railway Rolling Stock Plant Inc., the China Civil Engineering Group, and the China Railway Signal Communication Corporation – were spun-off from the MOR and placed under the management of the State Assets Management Commission (SAMC, or *guo zi wei*, 国资委). Also, the MOR detached universities and a group of high schools and transferred their right of management to central ministries and local governments (Yin-Nor, 2016). Therefore, the total number of employees was reduced from 3.4 million to 2.5 million in 2000.

Despite the institutional restructuring, the four-level management system of MOR’s core business was retained. In this system, there were 14 regional railway bureaus (*tie lu ju*, 铁路局) under the headquarter of the MOR (by 1999). Each of these regional railway bureaus governed several sub-railway bureaus that were located within their respective jurisdictions. At the lowest level are the stations and depots. Boundaries of regional railway bureaus were demarcated according to workload so that each of them was taking the same amount of work. As a result, the boundaries of railway bureaus and sub-bureaus did not coincide with the administrative boundaries, such as provincial or prefectural boundaries. Some regional railway bureaus might span across different provinces, whilst some provinces might be split into different railway bureaus’ jurisdictions. This organisational structure was similar but different from the traditional Chinese ‘*tiao-kuai*’ system (the vertically and horizontally integrated model). They had entire vertical reporting lines, the ‘*tiao-tiao*’ system, which was incorporated by professional/business relations (*yewu guanxi*) under the command of the MOR. However, the territorial units (the ‘*kuai-kuai*’ system) were not incorporated into any levels of the local governments, making the horizontal integration impossible. Though the numbers of the

regional railway bureaus had been adjusted many times in history, they had never overlapped with the administrative divisions. The independent operation of the MOR and MOT together with the unintegrated ‘*kuai-kuai*’ system created obstacles for the integration of railway planning with other transportations and with urban planning.

Not only the structural and institutional reforms but also the financial operation of the MOR impacted the planning and development of railways. Between 1978 and 2003, a series of reform policies of profit and cost-sharing, both between the MOR and the Central Government and between the MOR and its subordinate railway bureaus and enterprises, was put in place (see Yin-Nor (2016); Yu (2015) for a detailed discussion). These policies aimed to assign more profit and power (including business operation, resources allocation, and lower-level personnel reshuffle) to the MOR and its subordinates.

Before 1981, there was a separation between revenue and expenditure for the railway sector (*shouzhi liangtiao xian*, 收支两条线) – the MOR paid a 15% sales tax on gross revenues and handed over all its net profits to the national treasury, whilst the treasury supplied all the investment funds and operational costs for railway business. Since the early 1980s, rounds of trial and error on the sharing proportion between the central and the MOR were put in place, all designed to endow more profit collection and business operation rights as well as more responsibilities to the MOR. The result was that, from 1986 onwards, 5.3% of the railway revenue was collected as railway investment funds and the Central Government would no longer share the profit nor bankroll the railway business, whilst the MOR took full responsibility of railway investment and could seek loans for railway investment from both domestic and international sources.

The MOR imitated the central financial arrangements to its regional railway bureaus and subsidiary enterprises. Since the early 1980s, various responsibility division schemes had been carried out by the MOR, aiming at assigning more revenues and autonomies to its subordinates. Consequently, the regional railway bureaus took charge of the maintenance and upgrading of existing railways and construction of new but small railway projects. The MOR still monopolised large-scale construction projects.

Whilst the 1978 reform has launched the transformation of many industries from planning-oriented to market-oriented, the relaxation of state control has not been achieved in the railway industry. Compared to many other strategic sectors such as the civil aviation, petroleum chemical and electric-power industries, railway sector reform has been slow (Yu, 2015). The

MOR remained one of the most potent central ministries in China, enjoying the absolute privilege over railway planning, construction and operation at all levels. It was almost impossible for local governments or even the NDRC, the top economic regulator in China, to perform railway development programs without first consulting the MOR (ibid). Although this strictly hierarchical, bureaucratic, inefficient organisation has been criticised for years, it has been reserved by the rail policymakers and the railway ministry with rounds and rounds of resisting of the reform voices and attempts.

4.2.2. Segmentation of urban planning and railway planning

The segmentation of urban planning and railway planning originated from the institutional setup and the planning norms. At the central level, there are inter-ministry politics (Xu & Yeh, 2013). As national projects, the planning and investment of (both national and regional) railways projects require inter-ministerial networking, where the NDRC and other ministries negotiate towards a working consensus, even though the mighty enclosed MOR makes plans. Each of these central ministries concerns the policies and regulations for the sector in charge. For example, the MLR (Ministry of Land and Resources) approves land uses for national projects, whilst the MHURD (Ministry of Housing and Urban-Rural Development) grants planning permissions for these projects, and the MOF (Ministry of Finance) allocates funds. Different opinions from various sectoral perspectives may result in complex inter-ministry politics as they are all constitutionally at the same administrative level, and no one can override the other. The separation of MOR from the MOT makes the intermodal connection between the railway and other transport modes difficult. The fragmented policy system can lead to postponement of a project, which calls for various measures to overcome disputes and to heighten coordination (Li et al., 2014).

Two institutional setup features of the railway sector contribute to the segmentation of urban planning and railway planning at the local level. Firstly, railway planning is highly centralised whilst decision-making powers in other sectors are delegated mainly to lower levels. Both urban plan-making (including municipal transport planning) and land use plan-making are taken into the municipal governments' autonomy, despite that their plans need the final approval from higher authorities, either the provincial government (for general prefecture-level cities) or the Central Governments (for sub-provincial cities and cities with independent planning status). The municipal governments can easily ensure the integration and coordinating arrangements for various sectoral plans at the local level. However, railway planning is out of

the reach of local governments. This scalar mismatch of the central MOR and the local municipalities makes the integration of the railway planning with urban planning incredibly tricky. Besides, railway plans and urban plans are chronologically staggered, as they are made based on different planning sequences. For example, HSR was a new urban agenda for most local governments when it was firstly introduced in the early 2000s, and the local urban master plans have already been enacted without giving any consideration to the construction of HSR stations. It may be possible to amend local intends to fit in with the new infrastructure; however, for some, the discrepancy is irreconcilable, regardless of upfront time and effort.

Secondly, the territorial units (the ‘*kuai-kuai*’ system) of the railway sector are not incorporated into any levels of the local administrations. It is different from other sectors where all the subordinates of central ministries are also components of local governments. The unintegrated ‘*kuai-kuai*’ systems between the administrative line and the railway line created two consequences. On the one hand, the local needs in terms of railway development cannot be reported to the MOR through direct formal channels. Neither the regional railway bureaus nor the sub-bureaus could represent the interests of the municipalities. Consequently, various forms of informal *guanxi* are used to make up the ‘circuit breaker’ in the scalar structure. On the other hand, the parallel of the railway bureaus and the municipalities will induce much complexity and uncertainty in railway station planning as the governance is highly fragmented.

Figure 4-2 presents a typical planning process for railway projects. In such an approach, central government planners make national and regional railway network plans based on existing railway capacity and future socio-economic demands. They are long-term plans with a time frame of 10 to 15 years and a proposal about cities in the network. After the pre-feasibility study and initial reconnaissance and investigation, local governments of cities in the proposed railway networks are asked to reserve the lands for future railway development, including lands for railway lines and stations. When the State Council approves the project, the MOR will carry out the feasibility research, during which the local governments are involved in the decision-making process, and the site selection for the railway stations are discussed.

The relevance of local government in HSR station siting is guaranteed by national railway terminal design standards jointly endorsed by the MOR and the former Ministry of Construction (Ministry of Railways, 1999, 2006). According to the standards, station site selection should abide by local urban master plans and should align with local development directions. The 1991 *Rail Act* further states that the land use plan for railway projects shall be

incorporated in the national/provincial overall land use plan, and the planning of every railway line, station, junction area and related facilities within a planned urban space of a city shall be brought in accordance with the city master plan. Nevertheless, since different agencies make railway plans and urban plans with varying horizons of planning and periods, the time-delay, discordance and uncertainty exist in station area planning and development. Besides, the MOR may concerns more about the efficiency, the construction speed and cost of the whole network which often results in rivalries with local governments and tricky political manoeuvring (Yang & Han, 2020).

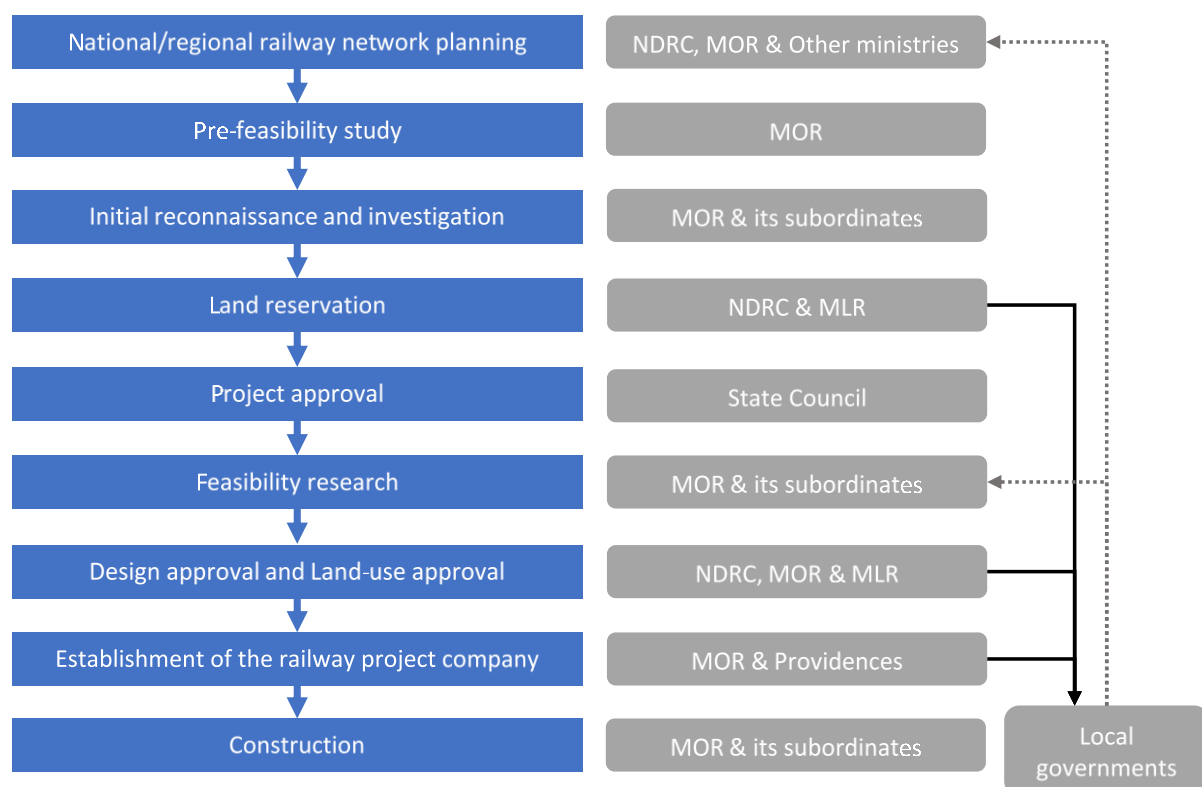


Figure 4-2. Planning process of railway projects

Source: Prepared by the author based on Informant 4, personal interview, 2018

When the location for the station is determined, the MOR conducts the station design whilst the local government takes charge of station area planning. They may not carry out the work at the same time as each of them has different timetables. The MOR often have prompt actions due to the desire to shorten the construction time and therefore reduce the construction cost. In contrast, planning of the station vicinity can be prolonged, mostly when the station is located in an undeveloped area. It is because the local government usually wants to plan the new district with more caution.

4.2.3. Division of property rights in station areas

There is a unique ‘dual-track’ structure of the urban-rural land use system in China; thus, urban land must be owned by the state whilst rural land must be owned by rural collectives. Although there is no private ownership of land in China, the *Constitution Amendment Act 1988* has set apart land use rights from land ownership, thus making it possible to privatise the land use rights. Under this amendment, land use rights become transferable, e.g., from the government to private investors (the primary market) and among different private entities (the secondary market). There are two ways to get land use rights of urban land from the state: (1) by grants or (2) by allocation. Land use rights are granted by local government bodies at municipal or county levels on behalf of the state and the grantees have to pay the market price of the land. Local governments are thus turned into de facto landowners. Local governments can only allocate land use rights for state-supported projects and public works. Land use rights obtained by allocation may subject to (transaction) restrictions and only land use rights obtained by grants are freely transferable in the secondary market (Yuan, 2004). If collectively owned land is involved in urban development plans and projects, the land must be first requisitioned by the state (presented by local governments) and converted into state-owned land before the land use rights can be granted/allocated to private land users.

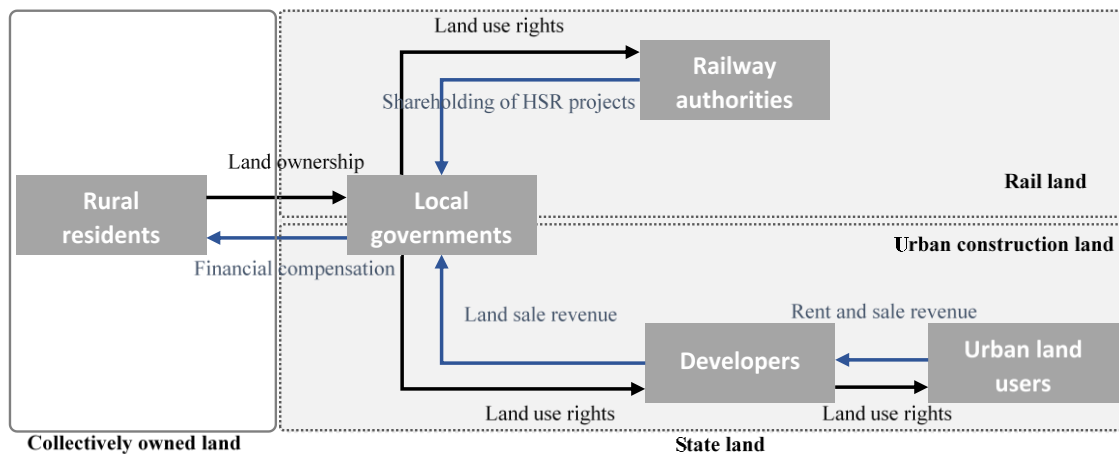


Figure 4-3. Land property relations among different participants

Source: Author

In the case of railway development, land use rights of railway lines and stations can be allocated to the railway authority, the MOR, since they are state-supported and public welfare-oriented projects. The local government should acquire land from the collectives before rights assigned

to the MOR. Railway related area includes state allocated (railway lines and station) land as well as their neighbouring land (the station vicinity). The former land use rights belong to the MOR whilst the latter land use rights belong to local governments where a 'red line' is drawn between them (Figure 4-3).

Economic reforms since the 1980s have witnessed the increasing autonomy of local governments in managing essential urban resources, e.g., land, fiscal revenue, and urban development planning management (Han, 2000; Hsing, 2006). Local governments have been empowered during the fiscal de- and re-centralisation as they were taking more responsibilities of public policy-making and infrastructure provision, despite tightened budget constraints. It thus has increased local governments' dependency on land-sale income, which took the vast majority of their extra-budget revenues (Moore, 2014). Railway stations (re)development has the potential to bring about land-sale and urban growth opportunities. Therefore, station area projects are attractive to local governments.

On the contrary, the multitude of restrictions on the railway land places huge limits on the potential of land value capture of the railway authorities. According to the *Land Management Law 1998*, the *Railway Law 1990* and the *Railway Land Use Regulation 1992*, land use rights of the railway authorities may not be transferred to a third party unless (1) appropriate approval is obtained, (2) transferee complies with all procedures to grant land use rights, and (3) granting fee is paid to the state (represented by local governments). Besides, the land use pattern cannot be changed unless (1) appropriate approval is obtained and, (2) granting fee is paid to local governments. It is reasonable since all the land use rights are allocated to the railway authorities without paying the cost.

In practice, some regional railway bureaus manage to obtain local governments' approval to change the land use based on negotiation and exchange of interests. For example, Liuzhou Railway Bureau cooperated with the local government to establish a logistic centre on the allocated land in 1997. The change in land use and the operation of the logistic centre were not only beneficial to the railway bureau but also facilitated the export of local goods and the enhancement of local manufacturing. Between 1993 and 2001, Beijing Railway Bureau redeveloped four local railway staff quarters into commercial, residential blocks in Shijiazhuang, Beijing, Tianjin, and Taiyuan, respectively (Yin-Nor, 2016). These were done by 'good relationships' with local governments and favourable consideration to their railway development and freight demands. However, in total, the railway land redevelopment and value

capture practices were dispersed and on a tiny scale. The retardance of the railway authorities' expedition in land value capture is also a legacy of the planned regime, where local cadres have been struggling for funding, projects, and resources and resources like lands become idle assets (Tjia, 2019).

Consequently, railway station area development is divided into two parts, the station and its vicinity. The MOR is responsible for the construction of HSR stations and pays the cost, whilst the local government oversees the surrounding area development, intra-urban transportation access construction and bears all the expense of land acquisition and corresponding compensation. Whilst local governments bet on future land sale-income and economic growth in the station vicinity, local railway bureaus take all the sideline revenues in the station (e.g., direct operation or franchising of convenience stores, restaurants, books stores, etc.). These sideline revenues pale into insignificance by comparison with the land-sale income of local governments.

The land scale of HSR station is evaluated and determined by railway construction norms, and the whole railway project covers the construction cost. For key stations, the MOR can also allocate a special fund (Jin et al., 2014; Ollivier et al., 2014). In practice, local governments often have the intention to increase the station scale. By convention, the extra construction cost is borne by local governments, and the operational rights of the station all belong to the railway authority (Ollivier et al., 2014). There are cooperation potentials between local governments and the MOR, especially in terms of the connection of municipal transport with the station. However, the joint development of the station or its vicinity is impossible.

4.3. Leapfrog Development and the Ministry-Province Joint Ventures

Despite the MOR's monopoly in initiation, planning and construction of railway infrastructure, railway construction in China was slow in the twentieth century. The operational railway network increased from 51,700 km in 1978 to 73,002 km in 2003 with a growth of 41.2% over 25 years, in other words, an average annual growth of only 1.4% (National Railway Administration, 2013). The 1978 reform has seen the rapid economic, industrial and urban development in China, which has also increased transport demands, particularly for rail transport (Wang et al., 2012). Accordingly, China's railway sector, especially its high-speed rail network, has expanded vigorously from 2003 to 2013 to accommodate the fast-growing transport demand (Yu, 2015). By 2013, the total national operational railway network had reached 103,145 km. In particular, the active HSR network had shot up to 11,535 km in 2013

from merely 405 km in 2003 (Figure 4-4). A preliminary national passenger railway network based on HSR was established. The large-scale rapid development of the railway network has facilitated urbanisation and industrialisation and also triggered changes in power relations among multi-scalar actors.

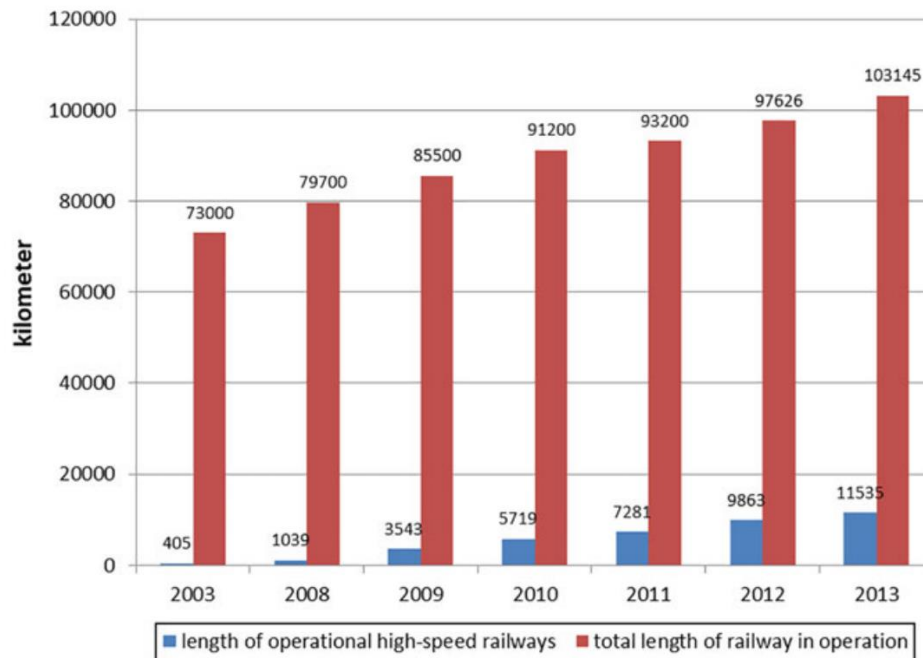


Figure 4-4. Operational length of the railway network in China (2003-2013)

Source: Yu (2015, p. 1071)

4.3.1. Leapfrogging railway development and the centralised long-term planning

Beginning in 2001, the MOR put into practice another structural reform policy – the vertical separation policy, which was approved by the State Council in 2000. This policy would separate freight and passenger transport service from railway infrastructure construction and management (Yin-Nor, 2016). It followed the long-standing reform direction to reduce state control and increase railway management efficiency based on market rules. The structural reform started with a pilot scheme to establish passenger companies in five regional railway bureaus (including the then Guangzhou Railway Corporation) (Yu, 2015). Experience gained in these experimental plots would be extended to other railway bureaus, and then the whole system could be marketised.

In parallel with the institutional restructuring, the MOR accelerated the research and development of HSR technology. In September 2002, the China Star Train, a domestically developed high-speed train set a record of 321.5 km/h on the Qinshen Passenger Railway,

marking that China had grasped the HSR technology. At that time, HSR was regarded as the most appropriate mass rapid transport for China. The establishment of a national HSR network would meet the mounting inter-city and inter-regional transport demand and would primarily facilitate the urbanisation and industrialisation process (Wang et al., 2012; Wang et al., 2013).

In 2003, when Liu Zhijun was appointed as the minister for the MOR, he decided to speed up railway development and in particular, the development of HSR network. To achieve his 'Leapfrog Railway Development' goal, Liu planned to recentralise power to the hands of the ministerial leadership (Yu, 2015). He quickly called a halt to the vertical separation reform, and the pilot schemes in five regional railway bureaus were soon stopped (Yin-Nor, 2016). In 2005, the then 41 railway sub-bureaus were all removed. The regional railway bureaus were also rearranged to form 16 railway bureaus and two railway corporations under the central ministry. The replacement of the traditional four-level management system (railway ministry – regional railway bureau – sub-railway bureau – station and depot) with the three-level mechanism (railway ministry – regional railway bureau – station and depot) aimed to flatten the organisational structure and facilitate the centralisation of planning and decision making. This institutional simplification pulled back from the predecessors' market-led reform plans and further consolidated the MOR's power (Yin-Nor, 2016).

During the leapfrog development period, a three-tier railway planning system has been established. At the top are the Medium and Long-Term Railway Network Plan (MLTRNP) which is implemented through a series of Five-Year Railway Development Plans (FYRPs). The MLTRNP outlines the national freight and passenger network development in about 15-20 years' range. The FYRPs set out the projects to be undertaken in each five-year cycle and ensure that the implementation of the railway development coincides with plans/projects in other sectors for the same period. Both of the two tiers of plans are made at the central level. At the bottom of the planning system is the project plan, which is prepared by the MOR based on a consensus with the local governments involved. Project plan outlines the work to be done in the following year and defines preliminary designs for the whole railway project. They specify engineering components like bridges, tunnels, and major stations. Only at this level of planning, local governments' involvement is formally assured (Lawrence et al., 2019).

The first MLTRNP was prepared by the MOR, with a planning term of 2003 to 2020. It was approved by the State Council and was released in 2004. The plan was based on comprehensive analysis, involving necessary reconnaissance and investigation, railway network research, the

examination of the critical projects, as well as extensive external consultation and review (Lawrence et al., 2019). The MLTRNP was the first industry plan of its type to be approved by the State Council, thus having the authority of the highest level of government. The FYRPs were also prepared by the MOR and jointly reviewed by relevant ministries at the central. During these processes, local governments were excluded from formal decision-making.

By 2008, the rapidly expanding economy and the fast urbanisation in China had witnessed the growing demand for railway development. Many local governments were keen to boost investment and accelerate the implementation of the MLTRNP 2004. It coincided with the global financial crisis when the Central Government launched a stimulus package to mitigate its impact on China. The ‘4 Trillion Investment Plan’ more than doubled the investment funds available for railway development (Figure 4-5). As a result, additional railway projects were proposed, and the NDRC revised the MLTRNP with the State Council’s authorisation. The MLTRNP 2008 set new targets of 16,000 km of PDL and nine regional intercity networks by 2020.

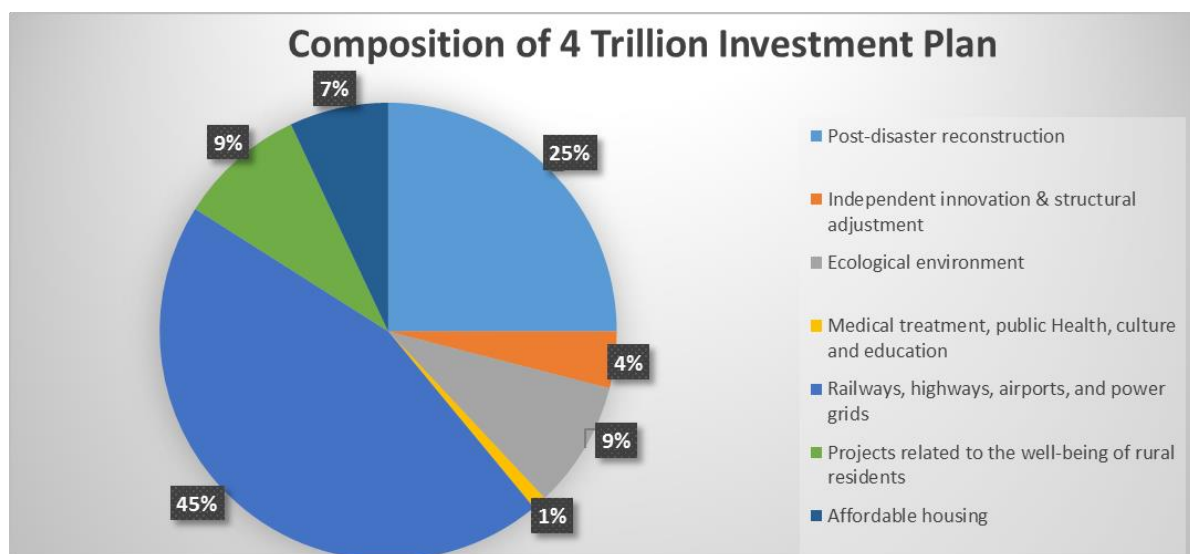


Figure 4-5. Composition of 4 trillion investment plan in 2008

Data Source: National Development and Reform Commission (2009)

With the capital injection of Central Government, HSR development in China has stepped onto the track of large-scale and fast growth. Both the MOR and local governments have a strong incentive to develop this infrastructure. Many provinces and municipalities also formulated provincial and municipal railway plans, which are coordinated with the national program and provided supports as required (Lawrence et al., 2019). The old railway system brought its superiority into full play at this time. The top-down authoritative and centralised management

style in the railway system contributed to the leapfrog development of HSRs, demonstrating the Chinese philosophy of ‘Concentrate Resources and Do Big Things’ (Amos et al., 2010).

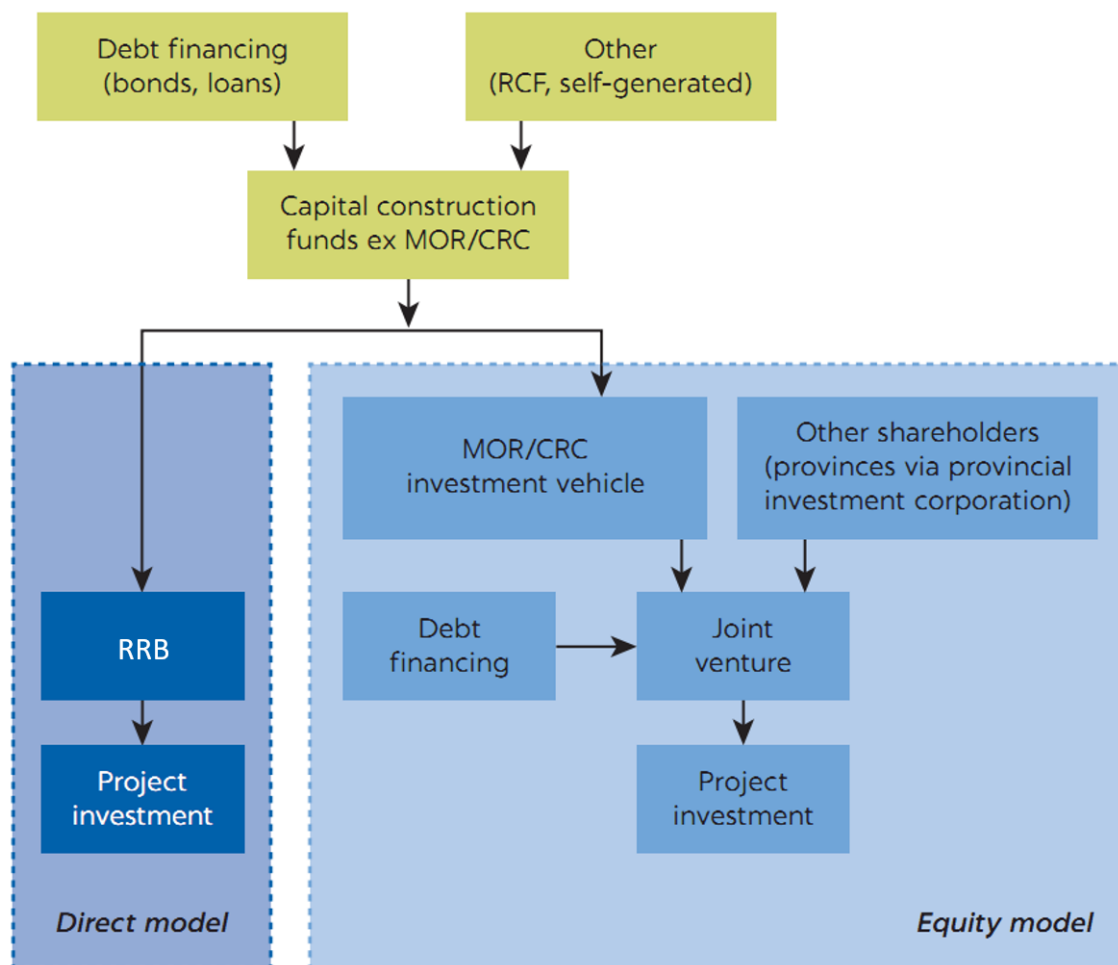
4.3.2. ‘Ministry-Province Agreement’ and the local’s voice

The leapfrog development of HSR networks also saw changes in the scalar division of investments for railway projects. Before the releasement of the MLTRNP 2004, the *direct investment model* was mainly used for railway development in China (Lawrence et al., 2019). In this model, the MOR provided funding for the railway projects directly whilst Regional Railway Bureaus carried out the project (Figure 4-6). The budget for new railway construction came from the railway investment fund, which was a surcharge on annual railway revenue, based on a specific policy implemented from the late 1980s. The total investment fund increased steadily and reached a yearly amount of CNY 50 billion in 2005 (Wang et al., 2012). Based on the amount, the *direct investment model* was capable of implementing intermittent single line projects but was far from sufficient to support the national-wide, large-scale and parallel projects. To achieve the ambitious goals of the MLTRNP, the MOR had to find other sources to top-up the necessary funds. As a result, the MOR started to engage provincial governments to the investment and signed ‘MOR-Province Agreements’ (MPAs) with them (Zhang et al., 2020). It is also known as the *equity model* and was first used in 1987 when Guangdong Province established a cooperative venture with the MOR to finance the San-Mao Line (Yin-Nor, 2016). The MPA has become a widespread practice and been used in most railway projects since 2004 (Lawrence et al., 2019).

In the *equity model*, the MOR forms a joint venture with the provincial government through its subsidiaries such as China Railway Investment Corporation or the regional railway bureau. Provincial governments may also use their financial arms (*rongzi pingtai*, 融资平台) to issue bonds or seek loans from banks and other financial companies as governments in China are not allowed to do so directly according to the *Budget Law 1995* (Wang et al., 2012). Shares of local governments vary from 30% to 50%, depending on the fiscal capacity of the province (ibid). As both the MOR and local governments rely much on bank loans, the actual capital in cash to launch the projects are typically less than 50% of the total cost (Lawrence et al., 2019). The MOR is mainly responsible for constructing the project and is legitimised to operate railway services after completion.

The joint venture sometimes involves “a small amount of third-party involvement, such as Ping An Insurance Group Co. of China Ltd. in the Beijing-Shanghai HSR company, China

National Offshore Oil Corporation in the Beijing-Tianjin Intercity Railway Company, and Fosun Group in the Hangzhou-Shaoxing-Taizhou HSR company” (Lawrence et al., 2019, p. 58). Yet, in total, the participation of private investors is rare, and their shares in the projects are small. Two factors foreclosed their motivations. First, most (HSR) railway projects require large initial investments but bear a shallow expected rate of return. Second, the MOR’s long-standing monopoly stereotype makes private investors also concern about the MOR’s discriminatory treatment on their (privatised) railways, by reducing allocated train schedules on their lines (Zhang et al., 2020).



Note: CRC = China Railway Corporation; MOR = Ministry of Railways; RRB = Regional Railway Bureau; RCF = Railway Construction Fund (which is funded by a surcharge on railway freight).

Figure 4-6. Direct investment model and equity model for railway financing

Source: Adopted from Lawrence et al. (2019, p. 57)

The provincial share in the MPA is often dispensed to individual municipalities based on route lengths and stations within their jurisdictions. In practice, costs of land acquisition for railway

use (e.g., railway lines and stations) of these municipalities are converted as their financial contribution to the provincial share (Wang et al., 2012). Therefore, it becomes much easier for the MOR to acquire the land, which is critical not only for building new tracks and stations but also for displacement and resettlement necessitated by the construction process. If not were the MPAs, the MOR had to negotiate with the municipal governments, the *de facto* landowners, for the right and sufficient land parcels to implement its railway building ambitions (Zhang et al., 2020).

The MOR is not the only winner. The subnational governments also benefit from their increased connectivity and accessibility to the rest of the country. Since the releasement of the national railway development plan, almost all provinces have signed MPAs, and the expansion of the HSR network is swift (Tjia, 2019). The subnational actors' enthusiasm to develop HSRs stems from inter-city and inter-regional competitions. Local governments cast more expectations on the induced economic opportunities for their cities or regions with HSR connections than on the profits of operating transport services. In other words, the massive investment of local governments for railway development does not target at the HSR business per se to pay off the cost. Instead, it counts on revenues and benefits brought by land-sale at railway stations and their vicinities (Wang et al., 2012).

By funding the railway project, subnational actors are also able to strive for their benefits in terms of the siting of routes and stations. Provincial governments often negotiate with the MOR on behalf of municipalities to enlarge the services of local economic developments and transportation (Lawrence et al., 2019). These MPAs, therefore, jeopardise the MOR's hegemony over railway planning as local governments are given more say over the planning of railway projects that they partially funded.

To recap, the central ministries and the MOR in particular, dominate the mid and long-term planning of railway developments, where the subnational actors are officially excluded from the decision-making. These strategic plans decide which cities and regions will be connected with the HSR network. As the local governments' demand for an HSR station in their jurisdiction is great, it is not uncommon to see their various ways of mobilising of power to persuade the MOR. In terms of project planning (or project design), both municipalities and provincial governments are entitled in decision-making, being as substantial shareholders of the MPAs. However, these scalar settings just define the formal and partial proceeding powers for multi-scalar actors. The planning processes are usually contingent upon specific

circumstances, and many informal institutions may make a critical difference if formal institutions fail to find the solution to the problem (Yang & Han, 2020).

4.4. Post-Railway Reform: The Empowered and Disempowered

In most countries, government control over the rail industry is never so tight. The combination of government function and enterprise management in the rail industry in China together with the rapid and large-scale HSR development has caused many problems, and above all, rising debt burden, serious operating accidents and corruption. On the one hand, the MOR's responsibility for its profit and loss was distorted, especially with the lack of both internal impetus and external pressures. As a result, the MOR's after-tax loss reached CNY 8.8 billion by the first half of 2012, with an asset-liability ratio of 61% (People.cn, 2013b). The reduced construction time to complete new railways five years ahead of schedule implies insufficient demand in the first few years, which increases the financial risk (Wang et al., 2012). Meanwhile, institutional obstructions restrain the access of private funds for railway construction, increasing the burden of the state. On the other hand, the composition of government safety supervision with enterprise safety management in the MOR has resulted in blurred responsibilities and lax oversight. The supervisory loophole was proved right in a severe crash of two high-speed trains on 23 July 2011, killing 40 people. Besides, the dreadful corruption in the railway system, marked by the corruption scandal of the former minister Liu Zhijun in 2011, threatened the subsistence of the 'independent kingdom' (Yu, 2015). Eventually, a reform in the railway system removed the MOR in 2013. The following years saw many policy adjustments in the railway industry, which caused new rounds of scalar restructuring.

4.4.1. The dismantling of MOR and the new institutional structure

To separate the administration function of the MOR from the enterprise management of railway operation, the Central Government carried out the reform in the railway system in 2013. This structural reform, as indicated by the Central Government, would realise a real separation between government and enterprise, reduce state control and red tape, emphasise supervision and regulation to improve administrative efficiency, ensure rail transport safety and take strict precautions against corruption (Yu, 2015). In that sense, the dismantling of the MOR signals an end to 'the last fortress of China's planned economy' in China.

On 10th March 2013, the reform program was released by the Central Government. According to the program, the MOR would be dissolved, and its duties would be taken up by the MOT, and the newly established National Railways Administration (NRA) and China Railway

Corporation (CRC). Under the new railway management structure, The NRA would take charge of the railway administration, including railway development plan-making, safety supervision, railway technology standards making, safety supervision and general regulation. It would be placed under the MOT. The new national railway company, the CRC, would oversee all commercial functions previously performed by the MOR, including infrastructure construction and railway operation for both passenger and freight businesses (Figure 4-7). It was a significant step to rail history in China, indicating the marketisation and corporatisation in the industry. In this sense, the CRC would become the leading player of the market, following the market rules to make a profit on its own. With the new administrative responsibilities, the MOT became able to do the overall planning for railway and other modes of transportation, integrating all means of transport to establish a comprehensive transportation system (People.cn, 2013a).



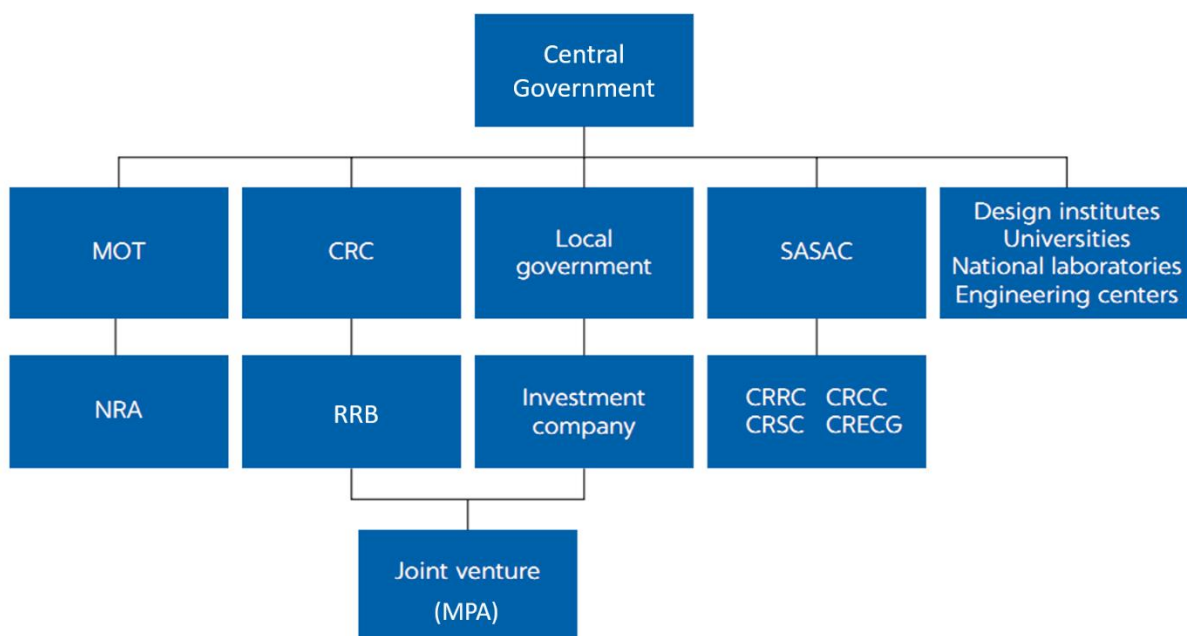
Figure 4-7. The 2013 reform of the former MOR

Source: Author

However, the reform cannot be accomplished at one stroke, and the institutional restructuring per se is not faultless. The complexity of institutions in the railway system and their retardance add to the difficulty. On the one hand, control of the railway industry will still be in the hands of the state, though the centralised power of the former MOR is to be split between the NRA and CRC. The CRC is not a genuine business corporation but a state organ with the obligation to manage and manoeuvre the railway industry. The CRC controls 95% and 80% of the national

passenger and freight transport respectively and is directly owned by the Central Government (Figure 4-8). It serves vested interests of the former MOR and becomes a mini-MOR as many of its organisations and staff are transferred from the MOR. The CRC, a super-giant in the railway industry has obtained exclusive business control and preferential treatments and privileges from the government. After reform, it can concentrate only on the business aspect of railway planning and development and can peel off the encumbrance of administrative responsibilities. The result is that it becomes hard for either local government-owned or privately-owned enterprises to compete with the CRC. Therefore, the reform was actually recentralising the power over the railway sector.

On the other hand, the new institutional setup may bring more complexity in railway governance due to intricate administrative ranks and separation of duties. The Central Government funds both the NRA and CRC under its administration. The separation of government from enterprise management has thus not been achieved. The NRA, the actual supervisor of the CRC, is a vice-ministerial level institution and is inferior in terms of political hierarchy to its target of supervision, which is a ministerial-level SOE. Besides, the parallel departmental setups in the CRC and the NRA in fields of railway project construction and railway safety supervision would result in inter-organisational conflicts.



Note: CRC = China Railway Corporation; CRCC = China Railway Construction Corporation; CRECG = China Railway Engineering Corporation; CRRC = China Railway Rolling Stock Corporation; CRSC = China Railway Signal & Communication Corporation; MOT = Ministry of Transport; NRA = National Railway Administration; RRB = Regional Railway Bureau; SASAC = State-Owned Assets Supervision and Administration Commission.

Figure 4-8. Overview of the new institutional structure of the railway sector in China

Source: Adopted from Lawrence et al. (2019, p. 8)

4.4.2. Land-use policy changes and the empowered railway company

The rapid expansion of HSR network has driven the debt liability for the MOR (and the CRC after 2013). As shown in Figure 4-9, the total liabilities of the MOR (CRC) surged from CNY 0.64 trillion in 2006 to 4.68 trillion in 2015, whilst the asset-liability ratio increased from 42.6% to 72.0% over the corresponding period. Within the total indebtedness, 70% was induced by HSR projects. As financial input from Central Government and loans from state-owned banks make up the majority of HSR construction fund (subnational governments in the MPAs also rely mainly on bank loans), there is a strong impetus for Central Government to reform the railway financing system. As part of the reform purpose, the railway authority's enthusiasm to rely on their own business should be aroused.

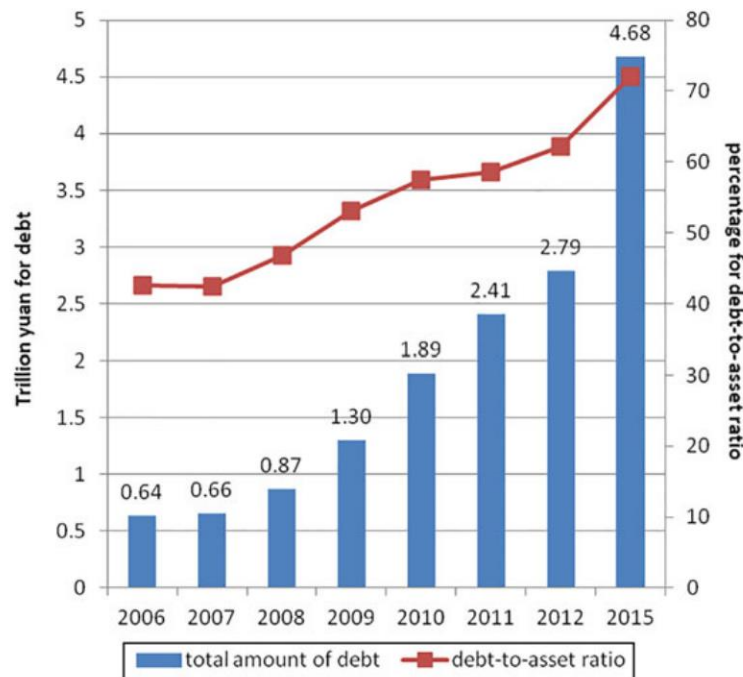


Figure 4-9. Total liabilities of the MOR and CRC

Source: Yu (2015, p. 1076)

Diversification of funding sources for railway construction is needed, and the possible sources may come from both inside and outside of the railway system. The former includes revitalising existing assets and diversifying business, whilst the latter needs to bring private investors into the industry. Immediately following the institutional restructuring in the rail industry in 2013, the Central Government made attempts at both aspects. A series of measures to advance the

diversification of funding sources for railway construction has released, which focused on broadening financial channels and land asset management (Table 4-1).

For the financing reform in the rail industry, policies released from Central Government and its ministries concentrated on two aspects. Firstly, they encourage and appeal social capitals to invest in railway development to realise the diversification of HSR investment; therefore, the financial pressure of Central Government can be released, and the marketisation of the rail industry can be achieved. Secondly, the National Railway Development Fund was set up to normalise the central subsidies to the rail industry. As a result, the Central Government can support and manage HSR development following market rules, and the CRC can terminate its over-dependence on subsidies, which in turn can reinforce private entities' participation.

Table 4-1. Central Government policies relating to railway construction funding and land asset management

Year	Policy-issuing agency	Title	Main points
2013	The State Council	Advice on structural reform of railway construction investment and financing and enhance railway development	Encourage social capital to invest in railway development Revitalise land asset in the railway system and encourage comprehensive development of railway land Encourage banks and financial institutions to lend money to railway construction
2014	NDRC	Regulation of National Railway Development Fund	Central government subsidy to railway development Attract social funds to the construction of railways
2014	The State Council	Guidelines on Rail Land Comprehensive Development	National authorised operation of station area land to the railway company Revitalise existing land asset in the railway system Encourage comprehensive development of new railway station areas Optimize urban planning and land use planning to coordinate with HSR development Enhance supervision and coordination
2014	The State Council	Advice on encouraging investment and financing innovation in infrastructure construction and other key fields	Encourage nongovernmental capital to invest in railway construction Open access to local governments and social capital for intercity, intracity and branch railway operation
2015	Ministry of Housing and Urban Rural Development	Notice on Implementing Rail Land Comprehensive Development	Solve the problem of discordance between HSR stations and their surrounding area Incorporate station area comprehensive development into urban planning Optimize land use planning around stations Organise reasonable road traffic and improve public facilities

Source: Author

As for land assets management, the policy orientation of Central Government is to remove the institutional constraints to land assets in the rail industry and encourage value realisation of these land. As previously mentioned, the current land management law limited the property rights of railway land as they are allocated from the state for the sake of public welfare; therefore, they cannot be commercially developed. But with the introducing of a series of new policies, the restrictions have been relaxed, and land within the station areas can implement comprehensive development. Also, there is a tendency to encourage cooperation between the CRC and the local governments to achieve integrated development.

With the substantial control in the hands of the government, investing in this highly monopolistic field seemed not inviting to the private sector. Therefore, very little domestic and overseas private investment has been drawn. In contrast, revitalising railway land assets is more feasible and has carried much expectation. It is because the value of many railway land resources is currently depressed by the land use regulations. The appreciation of land value derives mainly from three aspects.

First, value appreciation derives from the increase of plot ratio (or floor area ratio). Because more than 80% of current railway lands took shape before the 1990s, the plot ratio is meagre. Many freight, warehouse and logistics centres are still one-to-three story buildings. If they can be redeveloped into high rise buildings, the increased land value can be achieved. Second, incremental benefits gained from the conversion of land use. All railway lands are allocated, and as a condition, they cannot be commercially developed. But many public service facilities (living quarters for staff and workers, childcare centres, schools, etc.) are built along the railway line on the allocated lands. If these non-commercial railway lands could be converted into other uses (either residential or commercial), there would be a sharp increase in the land value. Lastly, railway stations could be further developed into urban transport complexes, and the station area could be converted into multiple land use. According to the current land use policy, railway station lands could only be used to provide transport services. If they can be comprehensively developed, the land appreciation would be huge. For example, in Hong Kong, by owning and developing residential and commercial properties above and around metro stations, the MTR Corporation has collected more than 50% of its revenue from land appreciation. Since the railway authority controls a large number of land resources across the nation, the land development potential is enormous. According to the report, by 2018, the

CRC's land possession has reached 6.8 billion square metres, of which 300 million could be used for commercial development.

The relaxation of land use regulations for railway lands has changed the scalar division of interests in the railway sector. Since all the railway lands are allocated from the municipalities, the empowering of the land use rights to the railway company could be regarded as a concession made by the local governments. First, compared with the considerable potential of land value appreciation, the compensation fees for land use conversion paid to the local governments would be the 'chicken feed'. As a result, they are keen to grasp a share of the appreciation benefits. Second, although the local's concerns with the annual land use quota were assuaged by the Central Government's promise (i.e., the converted railway land will not take up their existing allocated annual land use quota but will be endowed with extra allowance), comprehensive development of the station is despoiling local governments' vested interest to some extent. It is because the local government used to have the exclusive gain of land value appreciation in the station vicinity but now have to share the value appreciation with the railway authority. Lastly and importantly, as the railway authority now has the permission to convert land use and conduct comprehensive commercial development of the stations, they tend to seek for potential land development opportunities in site selection decision-making. The CRC has even introduced policies to encourage its subordinates (regional railway bureaus in particular) to actively participate in local urban master plan-making to enlarge their opportunity to possession more explorable lands.

4.5. Wuhan: The Emerging City-region

4.5.1. An emerging city-region: Economic growth, urban development and the planned '1+8' city circle

With 11 million population and an area of 8,569 square km by the end of 2019, Wuhan acts as the political, economic, cultural, scientific and technological centre not only in Hubei Province but also in China's Central Region. Wuhan has a glorious past both in terms of economy and urban development. It was honoured as one of the 'Top-Four Famous Towns' in ancient China and was one of the only two metropolises after the establishment of the new republic (the other is Shanghai). However, as a result of the coastal-oriented economic and urban policies in postreform China, its position in China's urban hierarchy has declined. Wuhan is under the pressure of economic and urban renaissance and has already taken a series of steps to promote urbanisation and regional development since the twenty-first century. In recent years, Wuhan

has maintained rapid economic growth, and its economic rank has been improving. Since 2015 when the GDP of Wuhan reached CNY 1.1 trillion for the first time, it has remained top 10 in terms of economic output for five consecutive years (No. 8 in 2015 and 2016, No. 9 in 2017 and 2018, and No. 8 in 2019).

Wuhan has a history of polycentric development, is known as a conurbation. The three-town layout, including Wuchang, Hankou and Hanyang, came into being in the Ming Dynasty (1368–1644) when the Han River's route changed to intersect with the Yangtze River (Han & Wu, 2004). This layout lasted to 1949 when the City of Wuhan was established to integrate the three towns. By 1957 when 'Wuhan Yangtze River Bridge' was built, the overland transportation in Wuhan was truly integrated. Hankou is now the business and financial centre of Wuhan, while Wuchang is dominated by tourism and education, and Hanyang is an important industrial district. Hubei Provincial Government is seated in Wuchang District, whilst the Wuhan Municipal Government is located in Jiang'an District (part of the old town – Hankou), standing on each side of the Yangtze River.

After rounds of adjustment of administrative divisions, the three old towns have been split into different urban districts (e.g., Jiang'an, Jianghan and Qiaokou in old Hankou and, Wuchang, Qingshan and Hongshan in old Wuchang). The surrounding counties (e.g., Han'nan, Caidian, Jiangxia, and Huangpi) have been annexed into the municipality by the late 1990s. Therefore, all the land use and urban development autonomies are now taken by the Wuhan Municipal Government. The contemporary urban structure of Wuhan comprises three tiers: seven central urban districts (Jiang'an, Jianghan, Qiaokou, Hanyang, Wuchang, Qingshan and Hongshan), six distant suburban districts (Dongxihu, Han'nan, Caidian, Jiangxia, Huangpi, Xinzhou) (Figure 4-10), and three national development zones (one national high-tech zone – Wuhan East Lake High-Tech Development Zone, also known as the Optics Valley and two national economic and technological development zones – Wuhan Economic & Technological Development Zone and Wuhan Airport Economic & Technological Development Zone).

Since the beginning of the 21st century, the municipal government has been proposing the development of the 'Wuhan Metropolitan Area' which aims to parallel in action with the three major city-regions (i.e., the JJJ, YRD and PRD). Similar to many other city-regions in China, the emergence of a regional-oriented development pattern in Wuhan is both driven by the top-down and bottom-up mechanisms (Li & Wu, 2017; Wu, 2016). The essence of this proposal is to use Wuhan's strategic location to form a closely related urban system, through which to fill

in a gap of and to provide an engine for, economic development and urbanisation in central China (Han & Wu, 2004).

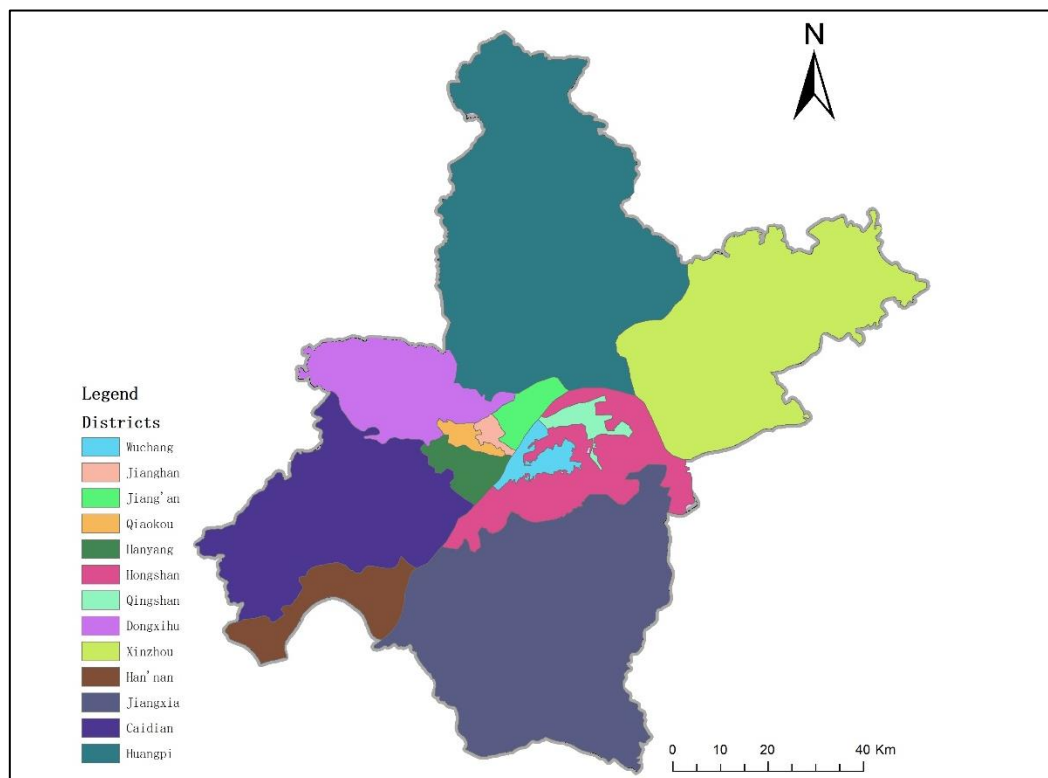


Figure 4-10. Administrative division of Wuhan

Source: Author

A rudiment of Wuhan Metropolitan Area was firstly proposed in 2002 by Yu Zhengsheng, the then-Provincial Secretary of Hubei Province who later became the Chairman of the CPPCC (Chinese People's Political Consultative Conference), using the concept of 'Wuhan Economic Circle'. This initiative has triggered a series of further discussion and research on the plan. As a result, the *Outline of Wuhan Metropolitan Area Development Plan* was released by the provincial government in 2004, which marked the establishment of the metropolitan area. With the releasement of the 'Rise of Central China Plan' by the State Council in 2006, the '1+8' city-region development plan officially received the nod of Central Government, becoming one major component of the national strategy. In 2007, Wuhan Metropolitan Area was set up as a national innovation pilot area for the 'Resource-saving and Environment-Friendly Society' by Central Government, which has further strengthened the cooperation and integration of the nine cities, especially in terms of environmental protection. Then in 2014, 'Wuhan 2049, Long-term Perspective Strategic Development Plan' was published. The perspective plan clearly defined the development target, that is, to consolidate Wuhan's position as the national transport hub,

to enhance its urban functions, and to realise the construction of a national central city, with the development the ‘1+8’ city circle (Wuhan Planning and Design Institute, 2014).

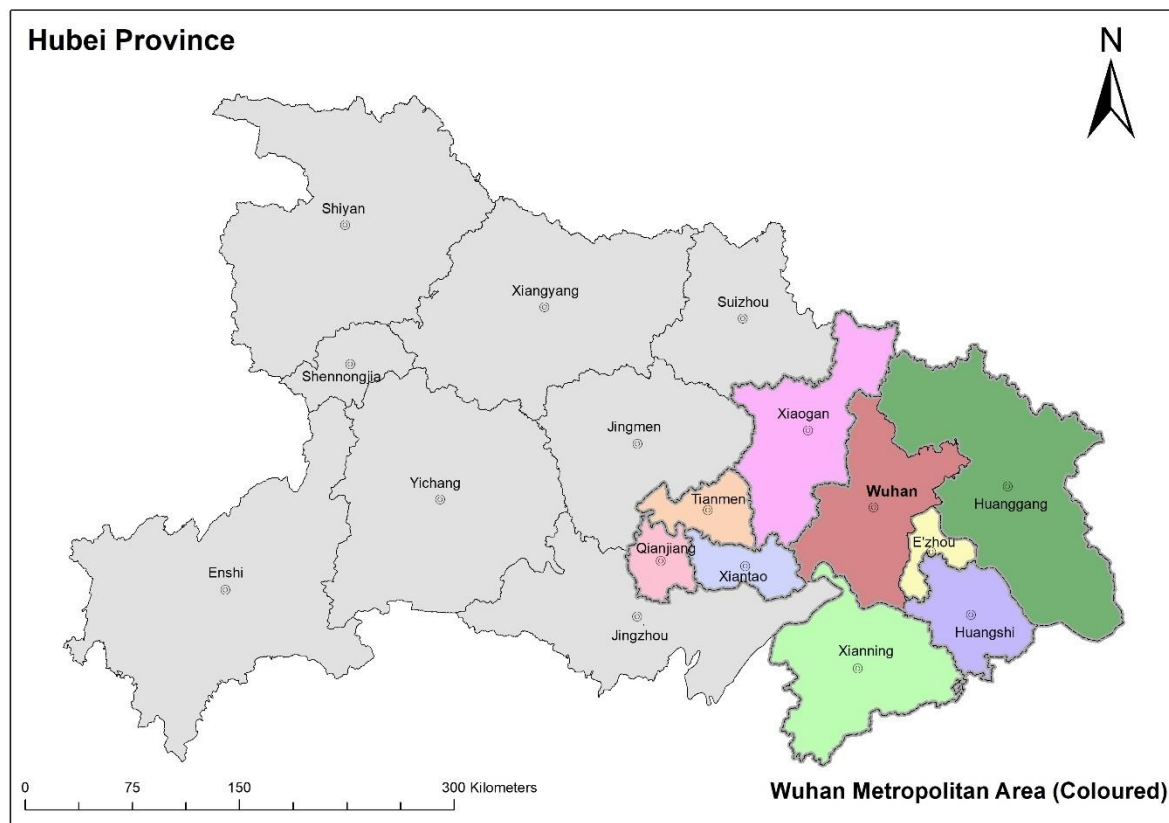


Figure 4-11. Member cities of Wuhan ‘1+8’ city circle

Source: Author

Wuhan Metropolitan Area, or the ‘1+8’ city circle, is a planned city-region centred on Wuhan, with Huangshi acting as the sub-centre and seven other constituent cities, i.e., Xianning, Huanggang, Xiaogan, E'zhou, Xiantao, Tianmen and Qianjiang (Figure 4-11). Covering an area of 57,800 square km (less than 1/3 of Hubei), Wuhan Metropolitan Area takes up half of the population and more than 60% of the GDP in the province by 2005 (Hubei Development and Reform Commission, 2007). It is the economic core region of Hubei and the tactic pivot for the rising of the Central Region in China. According to the *Outline of Wuhan Metropolitan Area Development Plan*, there are four tiers of main functional zones within this area, including priority development zones (central urban districts of Wuhan, Huangshi and E'zhou, as well as the developed areas along the economic corridor of Wuhan and Huangshi), key development zones (three city groups, namely Xiantao-Qianjiang-Tianmen, Xiaogan-Hanchuan-Yingcheng, and Xianning-Chibi-Jiayu, as well as three development axes along the major transport corridors), restricted development zones (surrounding areas of sensitive ecosystem areas,

tourist attractions, forest parks and natural reserves), and forbidden development zones (sensitive ecosystem areas, tourist attractions, forest parks and natural reserves) (ibid). As for industrial distribution, most advanced manufacturing industries, related research and development, and modern service industries (e.g., financing, logistics, information science, tourism, etc.) are concentrated in Wuhan; Metallurgy, energy, construction materials and other raw material production bases are located in Huangshi and E'zhou; The production and processing of subsidiary agricultural products, textile, garment, chemical, and automobile spare parts manufacturing industries, are distributed in Xiaogan, Xiantao, Qianjiang and Tianmen; Green agriculture, traditional Chinese medicine production, leisured tourism and ecological tourism are prioritised in Xianning and Huanggang.

After more than ten years of development, the integration of Wuhan Metropolitan Area has made many achievements, especially in terms of transport integration. For example, the completion of Wuhan-E'zhou Expressway at the end of 2012 has cut the travel time from Wuhan to E'zhou to 0.5 hours, and together with other seven expressway lines, a one-hour economic ring has been formed with all the '1+8' cities. Additionally, the completion of Wuhan Metropolitan Area Intercity Railway in 2019 has upgraded them into a half-hour economic circle with HSR.

Nevertheless, there are still problems against the development of the '1+8' city circle. Firstly, though overall, the metropolitan area is undergoing industrialisation, the economic development of the nine cities is uneven. Secondly, the hierarchical organisation of the urban system is unreasonable. There is one megacity (Wuhan), one large city (Huangshi), seven medium-sized cities, 25 small county-level cities and over 60 towns in the area, according to the urban classification criteria in China (mainly determined by population). The distribution of population presents a pattern of 'a small portion in the middle and a large portion at both ends', and the Urban Primacy Ratio reaches up to 5.8 (Hubei Development and Reform Commission, 2007). In other words, the dominating Wuhan has taken up too many population and resources, leaving behind underdeveloped small towns and a handful of uncompetitive medium-sized cities. Thirdly, the economic and social interconnection between different cities is relatively weak. The planned industrial distribution has not been achieved, and the driving effect of Wuhan is not apparent. Lastly and which may also be the root of the above problems, there is half-baked governance of the metropolitan area. There is no management organisation at the metropolitan level. The provincial government which has initiated the '1+8' city circle cannot act as the metropolitan government because of Wuhan Metropolitan only accounts for

a small part of the province's governmental affairs. The joint conference system can neither take this responsibility as it is only an informal meeting mechanism with no fixed organisation and clear-cut assignment of duties. Without effective management or coordinating organisation, the current unbalanced and less inter-dependent economic entities can hardly evolve into an integrated metropolitan area.

4.5.2. A city on the rail: Lines, stations and the plans

Wuhan is a city of great importance in the history of railway development in China. The history of railways in Wuhan dates back to 1890 when the then-Viceroy Chang Chih-tung advised his emperor to construct a railway linking Beijing and Hankou. Later, the Qing regime approved to build another vital railway line, Yue-Han Railway connecting Guangzhou with Wuchang in 1896, aiming to further enhance the industrial development in Wuhan. Jing-Han Railway was open in 1906, linking up the prosperous trading city with its national capital, while Yue-Han Railway opened in 1936 and strengthened the foundation for Wuhan to become substantial traffic, commerce and trading hub city in China. The integration of Jing-Han and Yue-Han railways by the construction of the Wuhan Yangtze River Bridge in 1957 further enhanced Wuhan's position as the connecting link between North China and South China.

As a city with a long history of railway development, Wuhan also places great expectations on HSR in the new era. The local government hopes to lift their economy and restore Wuhan's place in China through the creation of an HSR hub city. With the construction of Beijing-Guangzhou PDL (via Wuhan), Hefei-Wuhan PDL (connecting with Shanghai), Wuhan-Yichang PDL (joining with Chengdu), Tianxingzhou Yangtze River Bridge (a quadruple-track railway bridge) and the Intercity Railway Network (connecting the '1+8' city circle), Wuhan has already become one of the four railway network hubs, one of the six railway passenger transportation centres and one of the four locomotive overhaul bases in China (National Development and Reform Commission, 2016a).

Currently, there are three main passenger railway stations in Wuhan (Wuchang Railway Station, Hankou Railway Station and Wuhan Railway Station) (Figure 4-12). The conventional Hanyang Railway Station is now for freight use. Wuhan Railway Station is a dedicated HSR station, located in the east edge of Wuhan's core urban area. It is the first HSR station in Wuhan (built in 2009) and mainly serves the Beijing-Guangzhou PDL and other north-south HSR lines. Wuhan Railway Station also acts as an auxiliary station for east-west HSR lines, e.g., the Hefei-Wuhan PDL. Hankou Railway Station sits in Jiangnan District at the northwest of the Second

Ring Road. It serves both HSR and conventional lines, with an emphasis on the east-west lines, e.g., Hefei-Wuhan PDL and Wuhan-Yichang PDL. Wuchang Railway Station mainly serves the conventional lines and some intercity lines, e.g., Wuhan-Huang'gang Intercity Line and Wuhan-Xian'ning Intercity Line.

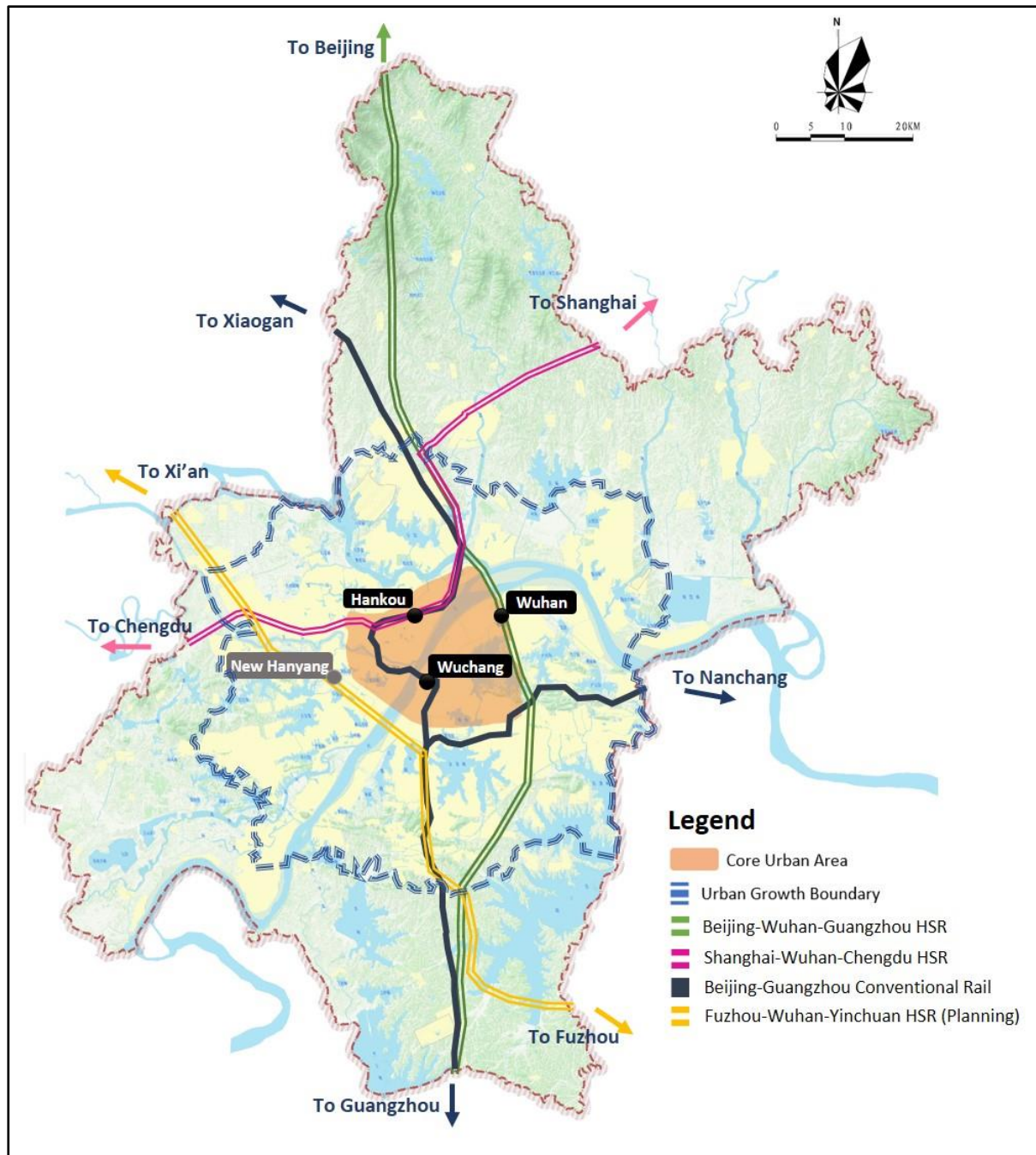


Figure 4-12. Existing and planned stations and main HSR lines in Wuhan

Source: Author

According to the ‘Wuhan Railway Hub Plan (2016-2030)’, a new HSR station, New Hanyang Railway Station will be built in Caidian District, serving the planned Fuzhou-Yin (via Wuhan) HSR line (Figure 4-12). It will link Wuhan with Xi’an, Yinchuan, Jiujiang and Fuzhou. Besides, two secondary stations will be built in the short-term: Liufang Station, located in the east of Wuhan, will be an auxiliary station for two intercity lines (Wuhan-Huang’gang and Wuhan-Xian’ning); Tianhe North Station will be located in Tianhe Airport and will integrate HSR with air transport by linking Yangtze (China Railway Corporation & Hubei Provincial Government, 2017).

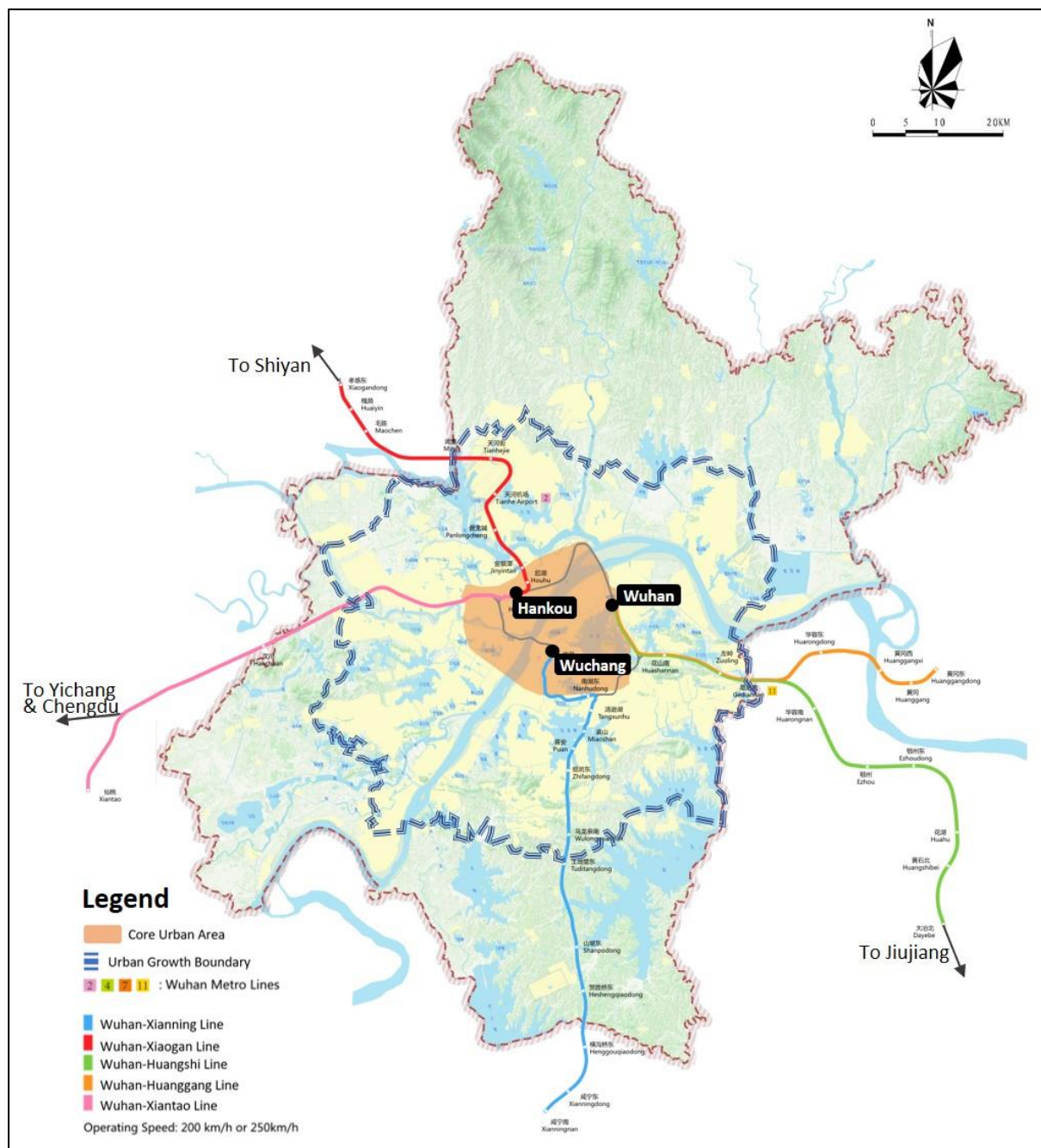


Figure 4-13. Existing stations and the intercity HSR network in Wuhan Metropolitan Area

Source: Author

Apart from the trunk HSR network which connects Wuhan Metropolitan Area with other major cities and city-regions in China, there is also an intercity HSR network connecting the '1+8' cities within the metropolitan area (Figure 4-13). Taking existing three stations and New Hanyang Railway Station as the starting points, all eight cities are linked with Wuhan with 30 min's HSR travel. Based on geographical locations, Huangshi, E'zhou and Huanggang are connected with Wuhan Railway Station, Xian'ning is linked with Wuchang Railway Station, whilst Xiantao, Qianjiang and Tianmen are currently connected with Hankou Railway Station but will be joined to New Hanyang Railway Station when it comes into being. The completion of the intercity network will incorporate the eight surrounding cities into Wuhan's urban system, making Wuhan a larger conurbation. According to the railway development plan, Wuhan will in total join HSR lines from 13 different directions and conventional lines from 9 different directions, becoming one of the largest railway hubs in China. The all-round railway networks will cut the travel time with major city-regions (e.g., JJJ, YRD, and PRD) to 3-5 hours (National Development and Reform Commission, 2016a).

Because of the critical position of Wuhan in the railway network and the urban hierarchy as well as the local governments' enthusiasm in seeking for HSR development opportunities, both HSR lines and stations in Wuhan have been planned and built rapidly in the early phase of HSR development in China (Zhou, 2014). As a result, the upside is that the metropolitan area can take advantage of better accessibility both within the region and beyond, while the downside is that there are many potential problems due to inconsiderate planning and over-quick construction.

Firstly, the intercity network is independent of the trunk HSR lines, even though they can incorporate part of the lines in some places. Consequently, all the intercity lines are dead-end railway lines, that is, without further connection to other cities outside the '1+8' city circle to enlarge their passenger sources. It has contributed to the massive deficit in intercity network operation (Zhou, 2014). Secondly, there is a scattered allocation of railway stations in Wuhan. It is partly due to the three-town layout of the city, but the 'one line with one station' pattern still exists in HSR planning and has led to the difficulty in train transfers. The repeated construction of stations, as well as the connecting transport between different stations, have ramped up the investment and resulted in waste (Zhang et al., 2015). Thirdly, the high

expectations about HSR stations' catalytic effect have resulted in oversized planning and remote locations of HSR stations. Although the early practice of combining HSR with new town development is based on the need and consideration for rapid urbanisation (Wang & Lin, 2011), the driving role of stations may be reined back because of too much precedence of the real need. Also, the situation in future after the rapid urbanisation is hard to be foreseen (Chen & Wei, 2013). Lastly, there is a Wuhan-prioritised tendency in the planning process. Wuhan has a higher voice during the negotiation with the CRC (or the MOR), the provincial government and its peer cities; as a result, the interests of generic cities may be sacrificed to maintain or fight for Wuhan's interest.

4.6. Summary

This chapter discusses the changes in scalar structure in railway planning decision-making. It provides the institutional and policy context for HSR station planning, with detailed information for city-region making and the railway (stations and lines) development in Wuhan. These discussions are necessary preparations for understanding the detailed empirical case studies in the next three chapters.

The impetus for China to boost HSR development is rooted in the anticipated multi-scalar impacts of HSR. The scalar restructuring in HSR station planning has mainly gone through three stages, within which the scalar divisions of labour among multi-scalar actors are different. In the pre-HSR era, the MOR owned, operated and supervised the railway industry in China. The institutional fragmentation of the 'tiao-kuai' system both at the national and subnational levels resulted in the segmentation between urban planning and railway planning. The traditional railway planning norms excluded subnational actors from the decision-making of national and regional railway plans, where the cities to be connected by new railways are decided. However, subnational governments' opinion is an indispensable part of HSR station site selection though negotiation between them and the MOR is unavoidable. Railway station area development is divided into two hands, with the MOR overseeing the station and local governments taking charge of its vicinity. Comprehensive development of the station and its vicinity is not allowed by law.

In the leapfrog development era, local governments' role in the station plan-making has been enhanced as they become an essential shareholder of the railway joint venture – the MPA. However, they are still excluded from the formal decision-making for mid and long-term planning of HSR developments. It is also worth noticing that these scalar settings just define

the formal and partial proceeding powers for multi-scalar actors. The real planning processes are usually contingent upon specific circumstances, and many informal institutions may make a critical difference if formal institutions fail to find the solution to the problem.

In the post-reform era, the Central Government has recentralised the power over the railway sector by establishing the CRC, whilst the relaxation of land use regulations for railway lands has despoiled local governments' vested interest in land value capture. The incentive of land value appreciation by comprehensive developed has also changed the CRC's motivation in site selection decision-making. Nevertheless, bureaucratic considerations have dominated previous rounds of railway reforms, and the state has always been the primary locus of decision-making. Without breaking-up the state monopoly in the rail industry, the private sector and the civil society would shy away or be shut off from the policy-making.

As a typical regional hub city and a city of great importance in railway networks, Wuhan has also incorporated HSR development with regional development. Transportation infrastructures can act as the bonding networks of cities, and the making of Wuhan Metropolitan Area has put much emphasis on HSR networks. HSR has equipped Wuhan with better accessibilities with cities both within and outside the metropolitan area. However, the regional policy in this metropolitan area is rather Wuhan-oriented. Wuhan is an overwhelming dominant city in this area, but its driving effects have not been shown up. The distribution of HSR stations in Wuhan is rather growth-oriented and is discordant with other eight surrounding cities. The 'one line with one station' pattern has eroded the accessibility of other cities with cities outside the region and increased their dependence on Wuhan.

Both the scalar structure analysis and the socio-economic context of Wuhan presented in this chapter are tightly connected with the three case studies in the following chapters, where the second dimension of 'scalar politics' – the vivid inter-scalar interactions (Brenner, 2001, 2004a; MacKinnon, 2011) in the planning of the main HSR stations in Wuhan will be discussed in detail with the conceptual framework outlined in Chapter 3.

5. Case Study 1: Wuhan Railway Station

5.1. Introduction

This chapter is the first of the three empirical case studies, each of which zooms into the respective planning and development processes. Based on the empirical investigation of the changing scalar structure in the rail sector and the socio-economic context of Wuhan in Chapter 4, the three case study chapters pay more attention to the scalar politics in specific decision-making processes. The theoretical framework presented in Chapter 3 facilitates the combined analysis of the multi-scalar actors, scalar structure, scalar interactions and the planning and development outcomes in each case. The case studies are not separate things from Chapter 4 but would together provide a whole picture of the scalar politics in HSR station planning.

Chapter 5 expositis the site selection and station area planning of the first HSR station in Wuhan – Wuhan Railway Station. Section 5.2 outlines the basic information of the station, e.g., location, operating railway lines, and the planning background. Section 5.3 investigates the multi-scalar actors and the scalar structure. Section 5.4 inquiries into the site selection, intraurban transport connection, and station area planning and development processes. It examines the scalar politics among multi-scalar actors, including the functional duality of the station, the goal of the project, power/resources and interests of various actors, their scalar strategies, interactions and inactions. Section 5.5 examines the planning and development outcomes and discusses how they have been impacted by scalar politics. Section 5.6 presents the findings of this chapter.

5.2. Background of Wuhan Railway Station

Wuhan Railway Station sits at the northeast of Wuhan, near Hongshan District and Qingshan District border. It is located between the famous East Lake Scenic Area and a small lake, called Yangchunhu Lake, being adjacent to and inside the Third Ring Road. It is the first dedicated HSR station in Wuhan (Figure 5-1). Despite sharing its name with the sub-provincial city, the station was constructed relatively recently. Before its completion in 2009, there was no Wuhan station and, Hankou Railway Station and Wuchang Railway Station were the two main passenger railway stations in Wuhan.



Figure 5-1. Wuhan Railway Station (Exterior)

Source: Author

The planning of Wuhan Railway Station began in the mid-1990s when China's national railway network planning developed the idea of building an express line connecting Beijing and Guangzhou via Wuhan. The station and the PDL were included in the MLTRNP 2004, both of which were essential components of the 'four vertical and four horizontal systems' (Ministry of Railways, 2004). Whilst site selection and design for the station competed in 2004 and 2006 respectively; the construction started in 2006. The station came into service at the end of 2009 with the inauguration of the first part of the Beijing-Wuhan-Guangzhou PDL, connecting Wuhan and Guangzhou. With an investment of over CNY 14 billion, the station has 11 platforms and 20 tracks (Wuhan Planning and Design Institute, 2006). Currently, apart from undertaking high-speed trains running in the north-south direction, the station also serves the Wuhan-Jiujiang PDL, two inter-city lines (Wuhan-Huanggang Line and Wuhan-Huangshi Line) and, works as an auxiliary station for the horizontal Shanghai-Wuhan-Chengdu PDL (Figure 5-2).

Wuhan Railway Station is well-connected with the intracity traffic. It has a car park of 38,620 m² at the ground level, which services both taxis and private cars. The metro station is placed at the basement level where Wuhan Metro Line 4 and Line 5 run through. Line 4 was put into operation in December 2013, whilst Line 5 is under construction. A bus transport hub and a

coach station are in the East Square of the station. The Station is also well-linked with its adjacent Third Ring Road and other express highways.

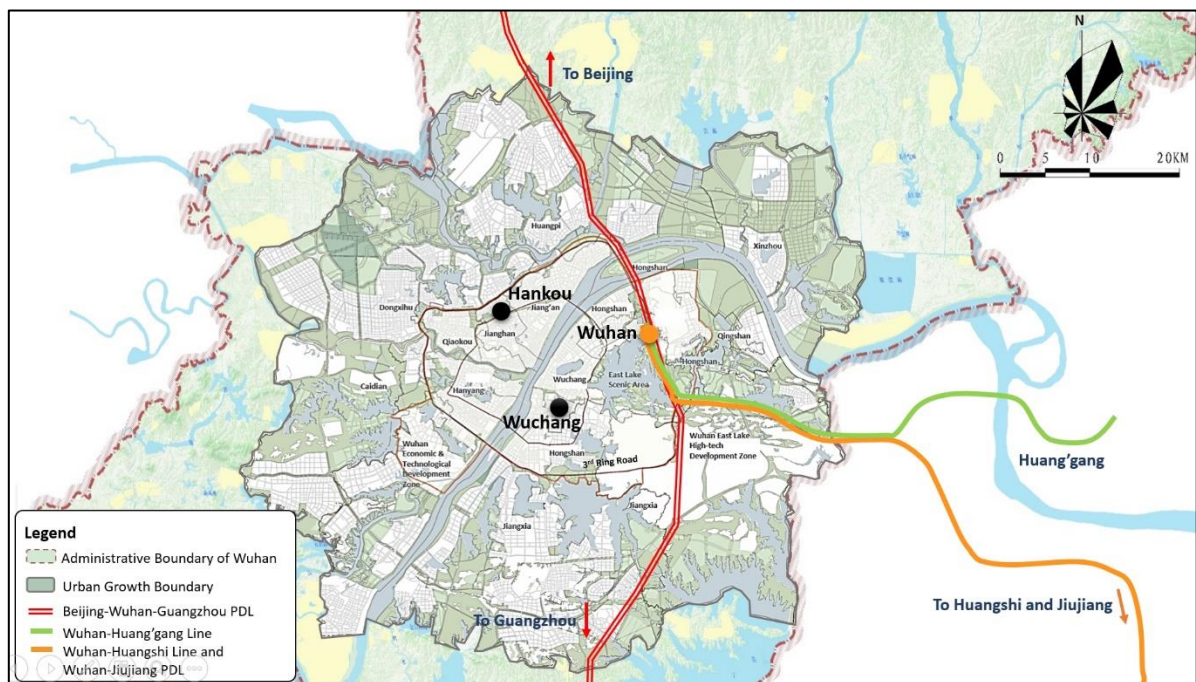


Figure 5-2. Location and operational railway lines of Wuhan Railway Station

Source: Author

5.3. Multi-scalar Actors and Scalar Structure

Wuhan Railway Station was developed in the MOR era and under the MPA between the MOR and Hubei Province. The MOR, NDRC, MLR, MHURD and the Ministry of Environmental Protection (MEP) were the leading players at the central scale. In the meantime, the main players at the local scale included Hubei Provincial Government, Wuhan Municipal Government, two district-level governments (Hongshan and Qingshan) and the East Lake New Technology Development Zone (known as the Optics Valley) (Table 5-1).

Table 5-1. Main players in the Wuhan Railway Station case

Organisation Tier	Main Players	Role
Central level	NDRC; MOR; MLR; MHURD; MEP	Policymaking and plan approval
Local level	Hubei Provincial Government	Coordinator
	Wuhan Municipal government	Wuhan overall development
	District-level governments (Hongshan, Qingshan & the Optics Valley)	Local development

Source: Adapted from Yang & Han (2020, p. 5)

5.3.1. Scalar division of labour

The MOR was responsible for initiating and coordinating HSR projects, based on the *Rail Act 1990* and the department responsibilities stipulated by the State Council (1998). It also possessed the authority in station site analysis. Accordingly, its opinions on site selection were decisive. The NDRC made final decisions for all HSR projects, based on inputs from all the ministries, including the MOR, MHURD, MLR, and MEP. These decisions took into account a broad range of considerations in national economic growth, rural-urban development, environmental protection, land and resources management, regional balance, etc. Therefore, their concerns may or may not immediately aligned with local governments' expectations from HSR station projects. The MOR assumed leading responsibility for formulating strategic plans, policies and regulatory framework for the railway system. It also played a crucial part in assessing and supervising HSR station projects and plans (e.g., urban master plans, land use plans and environmental protection programs) until 2013 when the CRC replaced MOR.

The relevance of local government in HSR station siting is guaranteed by national railway terminal design standards jointly endorsed by the MOR and the former Ministry of Construction (Ministry of Railways, 1999, 2006). According to the standards, station site selection should abide by local urban master plans and should align with local development directions. Local governments' voice has been weak in the pre-HSR era despite these national standards (see Chapter 4). However, under the MPA, local governments are given more say over the siting of routes and stations, especially for large cities that have contributed much to the cost and occupy an essential place in the railway network (Lawrence et al., 2019). It is because local governments have partially funded the railway projects, and the MOR also relies on them for the acquisition of land.

In terms of station area planning, the roles of the MOR and local governments were clearly defined by the Chinese laws and regulations on urban planning and land use management, in particular, the *Railway Law 1990*, the *Railway Land Use Regulation 1992*, and the *Land Management Law 1998*. As such, the MOR was accountable for the design and construction of the station, whilst the municipal government was in charge of planning and development of the surrounding area, including the provision of intraurban transport facilities. Land allocated to the MOR could only be used for the station and other rail facilities. They were subject to height and plot ratio restrictions specified by railway design standards and urban development plans. The municipal government drew up plans for the development of other land parcels in the

station area. Consequently, station area planning and development was assigned into two different hands – one was the railway authority and the other the municipal government. There seemed to be opportunities for collaboration between the two parties. Still, these arrangements made the functional integration and coordinated development of the station and its vicinity impractical, if not wholly impossible.

Whilst both provincial and municipal governments are included in the decision-making, district-level governments are excluded. They can only rely on their superior government – the municipal government – to fight for interests. When their desires are at odds with the municipal government, they must obey the superior's decision. It is because, in the Chinese administrative system, district governments do not have full autonomies (e.g., in terms of land granting and fiscal management). Administrative ranks are also crucial in decision-making.

5.3.2. Formal and informal communication channels

The establishment of the MPA bridged the local governments and the MOR so that negotiations could be done within the joint venture framework. In China, each state actor was designated with a specific administrative rank, which was critical in formal bureaucracies. Only institutions with the same levels of administrative status could have equal negotiating positions. To ensure that the central government hears and is in favour of local government opinions, Chinese local governments leave no stone unturned to use both formal and informal channels to communicate with the central ministries. Apart from formal report submission, they manage to get in touch with the superordinates through *guanxi* (关系) or personal connections. Various personal relations may connect key decision-makers at different scales, e.g., “[connections] by birthplace (*lao xiang*, [老乡]), past supervisors (*lao lingdao*, [老领导]), past colleagues (*lao tongshi*, [老同事]) or classmates (*lao tongxue*, [老同学])” (Yang & Han, 2020, p. 5).

Even without concrete *guanxi*, local governments would spare no effort to build their connections to communicate with the central ministries and commissions – ‘going to Beijing to visit the central ministries’ or *paobu jinjing* (跑部进京; the pronunciation in Chinese sounds like ‘running to Beijing’) was the standard practice for them (Yang & Han, 2020). The various provincial and municipal resident offices in Beijing (or, *zhujingban*, 驻京办) were the organs facilitating both formal and informal visits of their local cadres to the central government departments. On these visits, local development plans and initiatives were promoted with the aim to gain supports from the targeted persons. One interviewee noticed that,

“Both the Wuhan municipal officers and the Hubei provincial officers went to Beijing to visit leaders in the central ministries and asked for favourable considerations of their demands. ‘Paobu jinjing’ is a must. ... The yearly ‘Two Sessions’⁴ was an excellent opportunity for local government officials to meet with their target persons, whether officially or privately.”

(Informant 2, personal interview, November 17, 2017; Yang & Han, 2020, p.5)

Besides, calling on the telephone, discussing matters over a meal and informal meetings are other common informal channels for the communication between scales.

5.4. Scalar Politics

5.4.1. Functional duality and interests at various scales

Station and route siting for Beijing-Wuhan-Guangzhou PDL began its planning in the late 1990s. The first task in Wuhan was to assess the existing infrastructure, especially the capacity of Wuhan Yangtze River Bridge which connects Wuchang Railway Station and Hankou Railway Station in the conventional Beijing-Guangzhou Line (Figure 5-3). Both the MOR and local governments (provincial and municipal governments) agreed that the historic bridge was saturated; thus, a new bridge was necessary. According to a geotechnical analysis done by the MOR in 1995, there were three possible locations for a new river-crossing bridge (China Railway Siyuan Survey and Design Group, 1995). However, one perfect site was already used for the Baishazhou Yangtze River Bridge, a highway bridge that started construction in March 1997. As a result, Tianxingzhou, a place in the eastern periphery of the city, became the only suitable location for the new bridge (Figure 5-3).

“The municipal government took little account of the future railway bridge site selection and railway development when they were planning the municipal road projects. They paid more attention to local development, and they wanted to make it fast. [...] The railway sector and the local government just lacked communication at that time.” as one railway planner bemoaned.

(Informant 12, personal interview, May 22, 2018)

⁴ The ‘Two Sessions’ refers to *lianghui* (两会), or, the two annual national meetings which are scheduled consecutively in Beijing. One is the National People’s Congress and the other is the Chinese Political Consultative Conference (Yang & Han, 2020, p.5).

Wuhan Municipal Government agreed with the Tianxingzhou Yangtze River Bridge plan not only because it was technically feasible, but also because the new rail-road combined bridge would help to make up a third ring road, thus improving the intraurban traffic flows in Wuhan. The site selection for the bridge helped to narrow down the candidate routes for the HSR line to two (Figure 5-3). One would go along Shahu Lake in the city centre and pass through Wuchang Railway Station before it heading to the south. The possible station locations along this route included a site located to the east of Shahu Lake in Hongshan District (known as the Shahu Scheme) and the existing Wuchang Railway Station in Wuchang District. The other route would go along the edge of the East Lake in the eastern periphery of Wuhan. There were also two possible sites for the new station, including a place adjacent to Yangchunhu Lake in Hongshan District (known as the Yangchunhu Scheme) and a location near Liufang Freight Station in the Optics Valley (known as the Liufang Scheme).

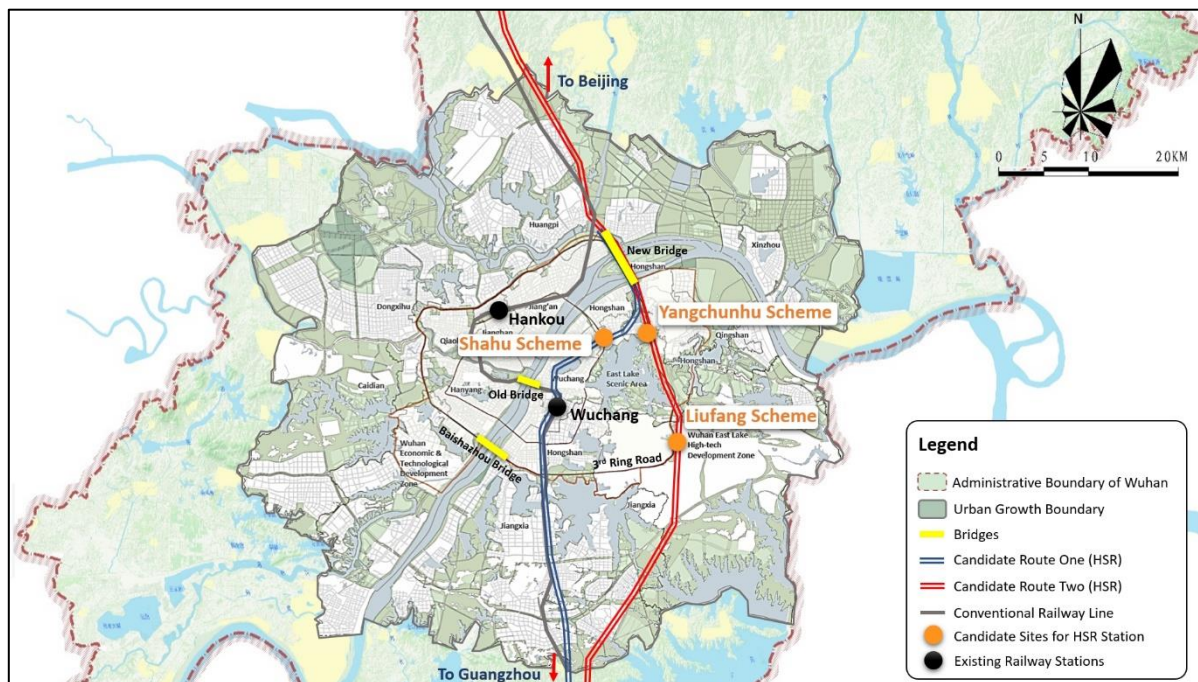


Figure 5-3. Site selection schemes for Wuhan HSR Station

Source: Author

Both the central and local governments agreed that incorporating HSR into Wuchang Railway Station was not feasible because of the capacity of the old station and the limited explorable land in that area. The MOR and Wuhan Municipality also rejected the Liufang Scheme, despite the recommendation of the East Lake New Technology Development Zone Management Committee – the local district-level government where Liufang sits.

“They (the management committee) recommended the Liufang Scheme because they thought if the HSR line went through their jurisdiction, it would be better have one station; conversely, if the station could not be assured, they’d better not have the rail line in their jurisdiction.” One railway planning expert interpreted.

(Informant 10, personal interview, May 18, 2018)

The MOR focused on the *node* function and thought the candidate site of Liufang Scheme was too far away from the urban centres of the three old towns. In the meantime, the municipal government cherished the *place* function of the Liufang area (since high-tech industries had developed rapidly in the area) and refused to place a railway station that might undermine the development opportunities there.

The MOR considered the Shahu Scheme as the best option from the network *node* perspective as it positioned the station in the inner-city area. The location was not only accessible and convenient but also cost-saving as it would use part of the existing old railway lines thus needed not to deal with extensive demolition in the urban area. Additionally, being close to Wuchang Station, this proposed site would easily attract passengers and support any commercial operations that the railway authority may own. As one interviewee indicated,

“The Shahu Scheme would enhance the connection between Wuchang Station and the new HSR station as they would be close to each other. Both conventional and high-speed rail could benefit from each other. It would be convenient for passengers, and therefore high ridership could be secured. [...] The inner-city location would also enlarge the railway authority’s non-fare income [...] The scheme just conformed to the central government’s initial aim to develop HSR.”

(Informant 9, personal interview, May 17, 2018; Yang & Han, 2020, p.4)

Wuhan municipal government initially accepted the MOR’s recommendation of using the Shahu Scheme for the new station, so they incorporated the plan into the *Urban Master Plan 1982-2000 (1988 Amendment)* and *Urban Master Plan 1996-2020* in the 1990s. Both plans were prepared by the municipality and endorsed by the central government ministries and commissions, including the MLR, MHURD, MEP and NDRC. Nevertheless, the municipality’s opinion towards the Shahu Scheme changed at the beginning of the century as the city got on the fast track of urban development. They began to value the *place* function of the station, with an eye to its stimulating effect on the development of surrounding areas. Shahu

Lake was the only lake in the inner ring area of Wuhan, which was also a natural and historical site of the city. There were many cultural and educational facilities in this area, such as libraries, resorts, museums, universities and television stations. With the rapid urban development and poor management in the early 1990s, real estate projects eroded the lake and resulted in severe environmental problems. *“The municipal government was considering implementing a remediation and renovation plan and was afraid of any new negative effects brought by HSR”* (Informant 26, personal interview, May 27, 2018; Yang & Han, 2020, p.4). The higher land value was expected in the urban centre as a result of the renovation plan. In contrast, the potential development of a new HSR station might cram many transport facilities in the already limited development space.

The alternative site – the Yangchunhu Scheme, on the contrary, would reserve the precious inner-city land and might bring in potential driving effects on local economic development. The scheme would place the station at the junction of Hongshan District and Qingshan District, next to a much-deteriorated area hosting the old state-owned Wuhan Iron and Steel Corporation and several villages. The proposed site, made up of mostly farmland, had yet to be developed. Land conversion from rural to urban occurred fast in the area, and the local government was aiming at removing the old heavy polluting steelworks to further develop the site. Still, a leading project was in need. It seemed that the new station would help to pull the trigger.

“New station would trigger new district development which can induce large-scale land sale opportunities”, one urban planner commented.

(Informant 19, personal interview, May 27, 2018; Yang & Han, 2020, p.5)

“Many successful HSR station projects in Japan and Europe have shown that the stations will have driving effects to the city where they sit. Wuhan Station area could also develop into employment and commercial centre and become the gateway of Wuhan”, another interviewee concurred.

(Informant 33, personal interview, May 26, 2018; Yang & Han, 2020, p.5)

Local governments, including both municipal and district governments, deemed the HSR station project as a marvellous opportunity to carry out their plans. Contrarily, the overall railway network efficiency and profitability were the central government’s primary concern. The negotiation on site selection of the new HSR station between the two scales reached an impasse.

5.4.2. *Competition for an ideal location*

The municipality tried to convince the MOR from the railway project point of view. They justified the cost and technical advantages of the Yangchunhu Scheme. Under the scheme, the station would not occupy any built-up area and thus save both money and time for housing demolition and resident relocation. Furthermore, the HSR line would have a straight layout which could ensure the running speed of the trains. However, the immediate response from the MOR was to reject, because the inner-city location of the station and the potential high accessibility, efficiency and profitability was the opportunity knocked but once.

As a consensus was hard to reach, the municipal government mobilised power from the public to dissent the MOR's proposal. The municipality collected petition letters from the local communities near Shahu Lake to show the MOR that potential noise pollution caused by the HSR concerned the public (Informant 10, personal interview, May 18, 2018). To dispel the municipality and residents' misgivings, the MOR visited local communities and carried out an environmental assessment. Acoustic shielding plans were worked out by experts from the technical section to ease the public concerns. As one MOR planner observed,

“The local resistance was real, but it was also the municipality's tactics. [...] What we did was to work out the most feasible acoustic shielding solutions and kept propagandising, educating and answering those common questions concerning the public, especially during field reconnaissance.”

(Informant 10, personal interview, May 18, 2018; Yang & Han, 2020, p.6)

Meanwhile, the MOR challenged the municipality's proposal and warned that the change of schemes would require amendments of a series of existing plans which would consequently trigger a long administrative approval process involving several ministries. It would take extra time as a unanimous approval of several ministries was extremely difficult. The two scales could not reach an agreement, and the site selection thus fell into a stalemate.

The negotiation took an unexpected turn in 2003 when a Hubei-born minister was nominated to the MOR. Local governments seized the opportunities quickly by manipulating the most welcome *guanxi*. The then provincial governor invited the new minister to Wuhan in November 2004 and discussed further plans of HSR development in Wuhan jointly. One correspondent recollected,

“The meeting was about how to reinforce railway development in Hubei Province. Both sides agreed that the talk was positive, constructive, and fruitful. In fact, the minute of meeting has become a program of action for railway development in Hubei for the past few years.”

(Informant 17, personal interview, May 18, 2018; Yang & Han, 2020, p.6)

Based on the high-level personal *guanxi*, the MOR moved away from their initial view towards the Yangchunhu Scheme. They had second thoughts about the potential benefits brought by the peripheral candidate site, including the low cost of minimal house removal and resident relocation, short construction duration, ample land for station and railway facility development (e.g., station squares and railway offices), and the straight layout of HSR lines. In the meantime, the new minister of MOR proposed to accelerate HSR development to build a national network. Therefore, fast-paced delivery of several flagship projects that could quickly showcase the success of the system was much needed. The Yangchunhu Scheme could thus fill in the void.

“Both internal (the new minister) and external (competition with other modes of transportation, e.g., aeroplane and motor transport) factors had transferred our priority of work towards quickly establishing the HSR network and completing some flagship stations. Besides, the close tie between the minister and the municipality has given Wuhan many favourable considerations,” confirmed by an official from the former MOR.

(Informant 34, telephone interview, September 05, 2018; Yang & Han, 2020, p.6)

With the endorsement of the MOR from the upper scale, Wuhan Municipal Government quickly acted on the opportunities to revise the urban master plan and land use plan, which needed the approval of other central government ministries. The strong support from the MOR was critical for the municipality to convince all related ministries because of the vital role of the MOR in railway-related projects. Following approval of all central government ministries in 2004, the Yangchunhu Scheme was added to the newly released *MLTRNP 2004* (Ministry of Railways, 2004), the later amended *Wuhan Urban Master Plan (2010-2020)* (Wuhan Municipal Government, 2010) and *Scenic Area Master Plan of the East Lake (2011-2025)* (State Council, 2011).

The materialisation of the *guanxi* connection between the two scales was further consolidated as local governments provided reciprocity to the MOR. On the one hand, the municipal

government aggrandized land allocation to the MOR. A land parcel of 1.109 km² was designated to station development, which was obsessively extensive, compared to Hankou Railway Station (0.569 km²) and Wuchang Railway Station (0.299 km²). Despite the land-use restrictions on rail land development under the existing regulation, it might be possible for commercial exploration once the limits are removed in the future. In that case, the railway authority is likely to liquidate the assets consigned to them. On the other hand, Hubei Provincial Government also introduced favourable policies to support railway development in their jurisdiction, such as building coordination institutions, providing tax privileges and temporary land for railway constructions (Hubei Provincial Government, 2005).

5.4.3. Cooperation to build a magnificent station

According to the shared vision of the central and the municipal governments, the new HSR station would be built into a landmark project. It would act as the gateway of Wuhan and a flagship station of the HSR network (Figure 5-4).



Figure 5-4. Roadside billboard, “Build the most influential station”

Source: Author, taken in the Yangchunhu Sub-centre

A total area of 11.033 km² was assigned to the final station site, of which 1.109 km² would be used for the station (Figure 5-5). When planning the land parcel allocated to the station, one consensus was to build a ‘magnificent modern station (i.e., a grand station with attractive architectural design)’ (floor area: 300, 000 m²) and two grand squares in front of the station – the West Station Square (175, 000 m²) and the East Station Square (147, 000 m²) (Wuhan Planning and Design Institute, 2006). The municipality set height limits to all buildings around the station for the ‘magnificent modern station’ to be visible from every direction (ibid). Another consensus was to develop a convenient and high-efficient connection from the city to the station. Both metro lines and road traffic were incorporated in the station design, and space was reserved for doing so. The first metro line connecting the city with the station, however, opened four years later after the station was in use in 2009.



Figure 5-5. Planning map of Yangchunhu Subcentre and the station area (Wuhan Railway Station)

Source: Prepared by the author based on Google Earth base map

Despite their consensus on the ‘magnificent modern station’, governments from the two scales had different expectations to the station. The central government was keen to speed up the construction of the station – a critical node in the national HSR network.

“After the site selection, the primary task for the MOR became the fast completion of the HSR project. Wuhan HSR Station was the critical node of the north-south PDL, the

inauguration of which would determine the connection of the whole line,” put by one railway planner.

(Informant 13, personal interview, May 28, 2018; Yang & Han, 2020, p.6)

On the contrary, ‘magnificence’ was linked to the catalysing effect of the station on station area development to the local government. Therefore, they preferred to draw the blueprint for the station vicinity with more caution. The Wuhan Municipality planned a subcentre in Yangchunhu area and set high expectations to the station by using the large passenger flow to stimulate growth in the area (Wuhan Planning and Design Institute, 2007). Four functional zones were envisioned for the 11.033 km² of land delimited for the business centre in the 2007 subcentre plan. The zones included a comprehensive service zone around the station, an urban business zone in the middle, an urban living zone in the west, and an industrial zone to the east of the station (Figure 5-5). To Wuhan Municipal Government, a future subcentre would improve the development prospect in the Yangchunhu area, which was otherwise disadvantaged because of its remote location (Figure 5-6).



Figure 5-6. Roadside billboard, “Yangchunhu HSR Business District; Build a world-class urban attraction; Promote the international profile, reputation and competitiveness of Wuhan”

Source: Author, taken in the Yangchunhu Sub-centre

Government from the two scales had no conflicts in terms of the vision towards the station project. Still, the significant uncertainty was whether they would join hands with concerted efforts in building the ‘magnificent modern station’.

5.4.4. Inaction in integrated development

Coordinated planning and development called for the collaboration of the two scales, both in terms of physical and functional planning (i.e., the services and management). Nevertheless, both the MOR and the municipality shied away from crossing the red line separating the ‘station’ from the surrounding area to talk about an integrated station area development. According to the informants from both scales, the potential prolonged project duration and the increased risk of project control and profit distribution accounted for their lack of motivation to act on integrated development.

“Integrated station area development requires prolonged negotiations between the MOR and the municipality to reach a consensus on divisions of investment and revenue. Besides, the construction period would be longer for integrated development.”

(Informant 34, telephone interview, September 05, 2018; Yang & Han, 2020, p.7)

“We (Wuhan municipality) would lose autonomy in planning and developing the surrounding area. [...] Integrated station area development would affect our overall plans and take away part of our land sale revenues.”

(Informant 15 & 16, personal interview, May 25, 2018; Yang & Han, 2020, p.7)

“Neither the MOR nor the municipality had commercial development experience; none of them could handle the uncertainty of integrated development. The use of private developers would be one possible solution, but it would increase the complexity of the project and jeopardise public interest.”

(Informant 26, personal interview, May 27, 2018; Yang & Han, 2020, p.7)

In fact, private developers had the confidence to use their expertise and capital to develop the station area, but the municipal government immediately refused their proposal. As one developer recalled,

“When we expressed our interest with the municipality to buy all the land in front of the West Entrance of Wuhan Railway Station and proposed to do an entire development

in this area, we were immediately rejected. They said they were not yet sure how to develop this area, and it was too risky to hand all the land to one private developer.”

(Informant 28, personal interview, May 25, 2018; Yang & Han, 2020, p.7)

Neither the MOR nor the municipality bridged over the demarcation between their respective responsibilities. They missed the opportunity to develop a ‘magnificent modern station’ with integrated *node* and *place* functions as they maintained their given roles to avoid risks associated with integrated development.

5.5. Planning and Development Outcomes

5.5.1. Site selection

After years of negotiation, Wuhan Railway Station was chosen to locate in the northeast edge of the core urban area of Wuhan, near Hongshan District and Qingshan District border. It is adjacent to and inside the Third Ring Road. The station is next to the old SOE – Wuhan Iron and Steel Corporation, which is still waiting to be relocated. The Wuhan Municipality planned a subcentre in Yangchunhu area in 2007 and set high expectations to the station by using the large passenger flow to stimulate growth in the area (Wuhan Planning and Design Institute, 2007). However, at the time of fieldwork in 2018, the subcentre was still under construction with some residential projects taking the lead (Figure 5-7). There was still a lot of underdeveloped land between the station and the urban built-up area.



Figure 5-7. West Station Square, residential buildings under construction and the urban built-up area to the west of the station

Source: Author, taken from Wuhan Railway Station

By changing from the Shahu Scheme to the Yangchunhu Scheme, the municipality has successfully preserved their valuable land in the urban core but has given up the potential gains that the station could bring to the central city through promoting the development of high-level services brought by HSR. The central government has foregone the most accessible site. Still, it has saved time and money in project construction by avoiding dealing with demolition and relocation of sitting tenants in the old town. Besides, as part of the compromise, the Wuhan municipal government offered more land to MOR – a total area of 1.109 km² was assigned to the station. It was impossible under the Shahu Scheme because of land shortage in the inner city.

5.5.2. *Transport connection*

Wuhan Railway Station is a dedicated HSR station, which has 11 platforms and 20 tracks (Wuhan Planning and Design Institute, 2006). It mainly serves Beijing-Wuhan-Guangzhou PDL, Wuhan-Jiujiang PDL, two inter-city lines (Wuhan-Huanggang Line and Wuhan-Huangshi Line) and works as an auxiliary station for the horizontal Shanghai-Wuhan-Chengdu PDL. The station links Wuhan and other major city-regions (e.g., Beijing-Tianjin-Hebei City-region and the Pearl River Delta) with 3-5 hours trip by HSR.

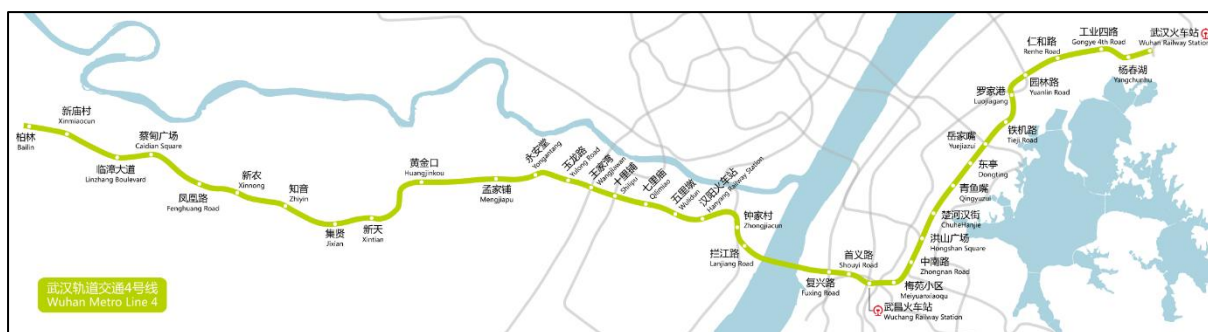


Figure 5-8. Route map of Wuhan Metro Line 4

Source: <https://zh.wikipedia.org>

Wuhan Railway Station is also well-connected with the intraurban traffic. It has a car park of 38,620 m² at the ground level, which services both taxis and private cars. A bus transport hub and a coach station are located in the East Square of the station. The Station is also well-linked with its adjacent Third Ring Road and other express highways. Nevertheless, the first metro – Metro Line 4 came in December 2013, thus four years after the opening of the station. Metro

Line 4 connects Wuhan Railway Station with other railway stations (e.g., Hanyang Railway Station and Wuchang Railway Station) and major business districts in Wuhan (e.g., Hongshan Square) (Figure 5-8).

Although intraurban transport infrastructure provision was the municipality's duty, they did talk with the MOR in the aspects of the incorporation of metro and road systems in the station, project implementation and public transport connection with the station. The reason was that enhancing intraurban accessibility would benefit both parties, and the overall efficiency of the transport network was their common concern.

5.5.3. Land use planning

The design and construction of the station did not synchronise with the planning and development of its vicinity. The MOR began the construction of the new Yangtze River bridge and the design for the HSR station immediately after the site location was approved in 2004. The releasement of the *MLTRNP* in that same year pushed the MOR to forward the station project. Consequently, the station construction began in 2006 and finished in 2009.

On the contrary, the planning and development of the surrounding area were slow (Figure 5-9). The municipal government had no immediate development plan for Yangchunhu area as it was not a priority on their agenda. Hongshan District Government was keen to develop the site but was short of autonomy in fiscal expenditure and land management. It was because the HSR station was a municipal project, and the municipality would give overall consideration to the project. The station area did not enter a substantive phase of planning until the end of 2005 when the then-mayor indicated his vision to build a subcentre in Yangchunhu area. The mayor's idea was immediately added to the urban master plan, which was under a new round of revision. The municipality convened an international competition for the sub-centre planning in March 2006, and the *Yangchunhu Subcentre Comprehensive Plan* was subsequently completed in 2007 (Wuhan Planning and Design Institute, 2007). The first land sale to developers came in August 2016, however, seven years after the inauguration of the station. A new round of site planning in the Yangchunhu area was called in June 2017, focusing on the construction of an HSR Business District. The two uncoordinated processes assisted both central and local governments to be in control of their respective place-dependent interests within their individual responsibility spaces. Nevertheless, the result of inaction in integrated development was that the local-pursued catalysing effect of the station had not been achieved yet.



Figure 5-9. Residential buildings under construction in front of the West Station Square

Source: Author

The inaction of the two parties in integrated development originated not only from the institutional division that assigned the processes to different hands of authorities but also from the different pursuit of the authorities. The *guanxi* approach seemed not relevant and thus not applied to the context-defined problem, i.e., the split between the station and its vicinity. Station development and development of its vicinity remained separate as a result of lack of integration initiatives. Both tiers weighted the potential benefits against the potential risks. The MOR worried about their lack of experiences for integrated development, while the local government concerned about the potential of losing control in shared planning with the MOR.

5.6. Summary

As the first HSR station in Wuhan, the planning of Wuhan Railway Station has raised intensive multi-scalar interactions and mirrored scalar structure changes in the rail sector. The case study reveals that the inter-scalar interplays have dominated the decision-making process and shaped the interaction structure and trajectory of HSR station planning and development. Figure 5-10

illustrates the institutional/policy settings, decision-making, and planning and development outcomes of the Wuhan Railway Station.

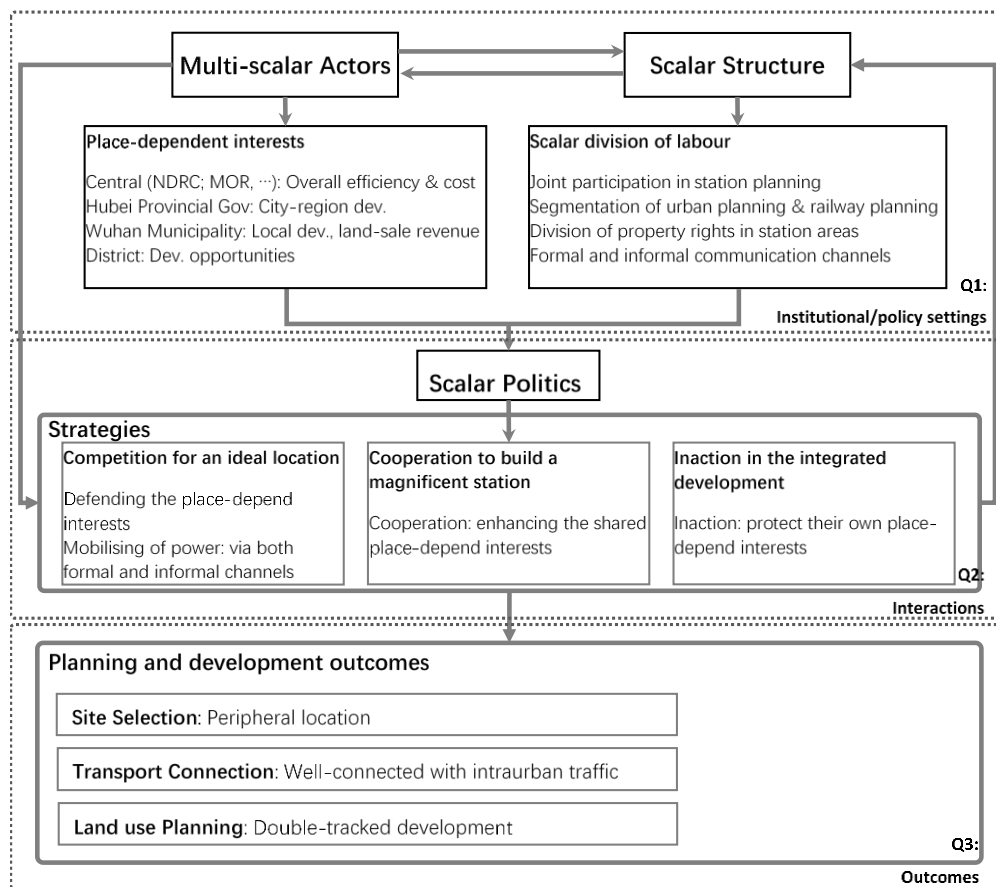


Figure 5-10. A detailed picture of the decision-making and planning outcome for the Wuhan Railway Station

Source: Author

With monetary and land resources devoted to the railway projects, local governments (including provincial and municipal governments) have been assigned with increasing decision-making powers, which differs from the pre-HSR era when the MOR dominated railway planning and development. The *institutional overlaps*, however, have led to both cooperative and competitive opportunities between multi-scalar actors. Similar to the planning of other transport projects (Romein et al., 2003; Vickerman, 2008), Wuhan Railway Station decision-making saw conflicts between the piecemeal local perspectives and the overall central perspective. But the decision-making was not a zero-sum game. State actors at all scales took accounts of both the *node* and *place* functions of the station, which assures the possible common grounds between them.

During the contentious siting process, scalar strategies such as building coalitions and mobilising power from other scales were used to address the issue of conflicting *place-dependent interests* at different scales. Shared *space of dependence* between the districts and the municipality was easy to achieve, as they shared similar *place-dependent interests*, that is, maximising urban development opportunities and minimising side effects brought by the station. The *space of dependence* between the MOR and the municipality was, on the contrary, hard to achieve. The *space of engagement* was leveraged by using informal personal connections (*guanxi*) with the new minister.

In terms of the station area and intraurban transport planning, the scalar relation was relatively concerted, as the *scalar division of labour* strictly defined the *place-dependent interests*. There were opportunities to enlarge their interests, that is, the integrated development. However, the integrated development idea was implemented partially, reflected in the mutually beneficial connection between the intraurban transport services (e.g., metro, express roads, buses and taxis) and the station. The integration between the *node* and *place* functions was ignored mainly, but this turned out to be the optimal choice for both the central and local actors. For the municipal government, they could obtain all the land sale revenue. Still, a full capture of the benefit associated with the passenger flow required them to go beyond their comfort zone of business defined by the institutional segregation of land use management and property right. For the central government, they obtained (more than) adequate land to build a massive modern HSR station in the shortest time possible but moving further to integrated development also required new skills that they did not readily have.

The planning outcome was not only materialised in the built environment, i.e., the station location, land use arrangements in the station area, and intraurban transport connection, but also institutionalised in the *scalar division of labour*. With the temporary realisation of interests for multi-scalar actors, the existing scalar structure, i.e., the MPA and the division of property rights between the station and its vicinity has been reinforced.

6. Case Study 2: Hankou Railway Station

6.1. Introduction

Chapter 6 turns the attention to an upgraded railway station in the inner-city area – Hankou Railway Station. It aims to figure out whether the inner-city location of the station would trigger redevelopment opportunities and more state-market interactions, thus a different kind of scalar politics. Section 6.2 profiles the basic information of the station. Section 6.3 examines the multi-scalar actors and the scalar structure. Section 6.4 interprets the decision-making processes of introducing HSR into the old Hankou Station, implementing station area redevelopment and enhancing intraurban accessibility. It dissects the concerted/conflictive interests and scalar strategies of multi-scalar actors. Section 6.5 reflects the planning and development outcomes. Section 6.6 summaries the main findings of the chapter.

6.2. Background of Hankou Railway Station

Hankou Railway Station (Figure 6-1) is located in Jinjiadun area, Jiangnan District, facing to the northwest part of the Second Ring Road. The station sits at the northside of the Yangtze River and is connected with Wuchang Railway Station which is in the south bank through the historic Wuhan Yangtze River Bridge.



Figure 6-1. Hankou Railway Station (Exterior)

Source: Author

With 10 platforms and 20 tracks, the station serves both conventional and high-speed trains running on trunk lines and inter-city lines. It is used as the main intermediate station for Shanghai-Wuhan-Chengdu PDL and the terminal for inter-city line connecting Wuhan with Xiaogan. It also serves the conventional Beijing-Guangzhou Line and shares part of the transportation responsibility for Beijing-Wuhan-Guangzhou PDL (Figure 6-2).

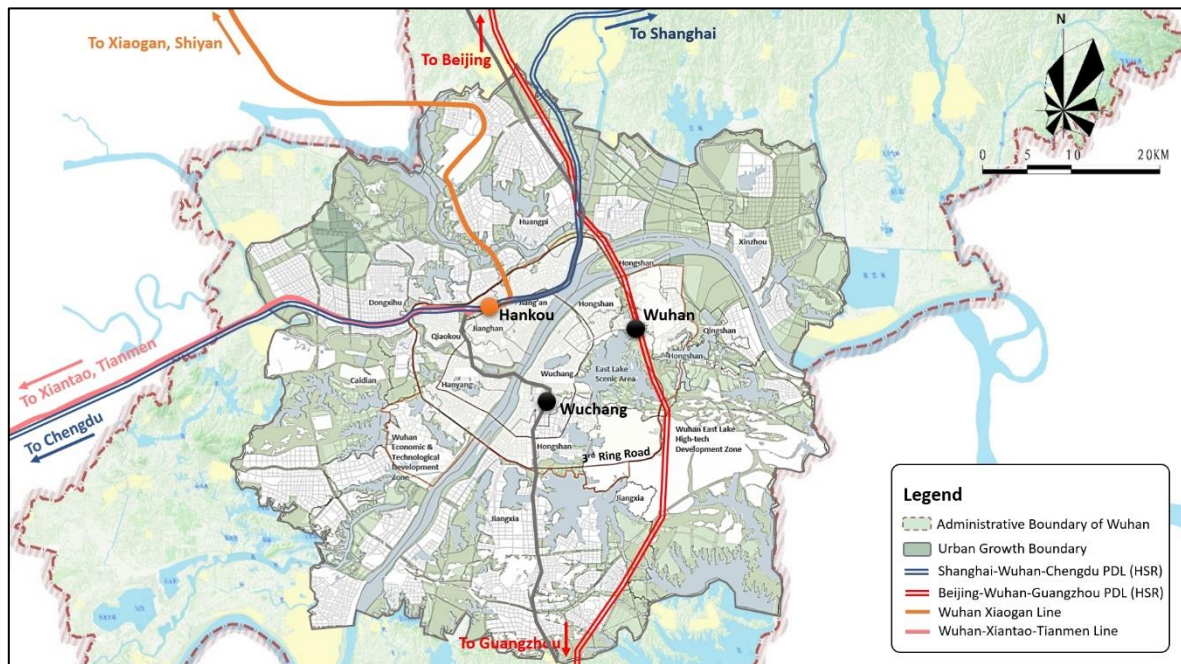


Figure 6-2. Location and operational railway lines of Hankou Railway Station

Source: Author

The history of Hankou Railway Station dates back to one hundred years ago. Before being relocated to the current site in 1991, the station was in Dazhimen area and near the riverbank in Jiang'an District and so it was called *Dazhimen Railway Station*. It was the first large station on the historic long-haul railway line – the Luhan Railway Line (芦汉铁路) connecting Beijing and Wuhan. French architects designed the station in a (*Western*) *New Classic* style (Figure 6-3). The construction started in 1896 and completed in 1903. The station was renamed Hankou Railway Station in 1949 after the establishment of the People's Republic of China to highlight its importance in the old town. The station area has been one of the most prosperous areas in Wuhan. In 1991, Hankou Railway Station was relocated to its current location in Jinjiadun area, outside the Second Ring Road in Jianghan District. The reason was that the Wuhan Municipality wanted to eliminate the segregation effect of the station and tracks in the city

centre. Therefore, the old Hankou Railway Station was abandoned and later changed into a railway museum (Figure 6-4), whilst the old railway lines were removed. The new Hankou Railway Station was built in 1991 and was put into use in the same year. The new railway line was put along and outside the Second Ring Road.



Figure 6-3. Dazhimen Station (1917)

Source: <https://baike.baidu.com/pic>



Figure 6-4. Dazhimen Station (2017)

Source: <https://baike.baidu.com/pic>

Jinjiadun area used to be an urban-rural fringe area when the station was built in 1991 but has now become a very liveable and dynamic place after years of development. There are schools, hospitals, shopping malls, offices and residential communities around the station. The CBD (central business district) of Wuhan is only 20 min's walk from the station.

HSR was introduced to Hankou Railway Station in April 2009 when the first part of the new Shanghai-Wuhan-Chengdu PDL (Hefei-Wuhan Section) was open. The upgrading and reconstruction work of Hankou Railway Station was launched in January 2008 and finished in February 2010. Both the Hefei-Wuhan PDL and the redevelopment of Hankou Railway Station were key projects in the *MLTRNP 2004* and was operated under the MPA between the MOR and two provinces (Hubei and Anhui). Metro Line 2 was introduced into the station in December 2012, marking the first railway station connected with the underground metro in Wuhan. The metro line links Hankou Railway Station with Tianhe International Airport and the Optics Valley. The station is also well-served by buses and taxis. Jinjiadun Coach Station, one of the largest coach hubs in Wuhan, is located on the other side of the Second Ring Road.

6.3. Multi-scalar Actors and Scalar Structure

Despite being planned in the same period with Wuhan Railway Station, the planning and redevelopment of Hankou Railway Station involved more players. It is because Hankou Railway Station sits in the built-up area and the redevelopment of the station area requires negotiation with the sitting tenants (e.g., urban village collectives and existing businesses) and involvement of the developers. Apart from the multilevel governments, the private sector also had an impact on the outcome (Table 6-1).

Table 6-1. Main players in the Hankou Railway Station case

Organisation Tier	Main Stakeholders	Role
Central level	NDRC; MOR; MLR; MHURD; MEP	Policymaking and plan approval
Local level	Hubei Provincial Government	Coordinator
	Wuhan Municipal government	Wuhan overall development
	District-level governments (Jiangnan)	Displacement and resettlement management
Private sector	Urban village collectives	Redevelopment space provision
	Developers	Station area development

Source: Author

6.3.1. Institutional restructuring and alignment of two systems

Both Wuhan Railway Station and Hankou Railway Station were planned and developed in a time of emerging city-regionalism (Han, 2015). The *new state spatiality* targeted at regional balancing and city-region making (Han, 2015; Li & Wu, 2012, 2017; Wu, 2016). The state spatial project (Brenner, 2004a) also unfolded in the railway system. In 2005, the then 41 railway sub-bureaus were all removed. Three more regional railway bureaus were established (including Wuhan Railway Bureau, Xi'an Railway Bureau and Taiyuan Railway Bureau) to form 16 regional railway bureaus and two railway corporations under the central ministry. The flattened three-level management system was proclaimed to enhance transport efficiency and to optimise the allocation of transport capacity (Yin-Nor, 2016). In fact, there were deeper strategic considerations, according to the one official from the former MOR.

“The institutional rearrangement of the railway system was also part of the new national policy of city-region development. After the restructuring, jurisdictions of those regional railway bureaus became more consistent with the boundaries of major city-regions, that is, each major city-region had their own regional (railway) authorities. [...] For example, Wuhan and Xi'an, the two important regional core cities, only had a sub-railway bureau before the reform, which was very unfavourable for their city-region development. By establishing a regional bureau and, in particular, locating the head office in the core city, the railway development would better facilitate the city-region development.”

(Informant 34, telephone interview, September 5, 2018)

The railway system used to focus on the management of the rail transport system thus ignorant of the urban system. The institutional restructuring had changed the situation, and hence the railway system and the urban system became more coordinated with each other. As the official further explained,

“Taking Liuzhou Railway Bureau, for example, Liuzhou Railway Station was a critical terminal station, which had played an important role in the freight system. So, we used to have the Railway Bureau in Liuzhou and a sub-railway bureau in Nanning, the provincial capital city of Guangxi. That was totally rail-oriented and was not conducive to regional and provincial development. So, the 2005 reform relocated the Railway Bureau from Liuzhou to Nanning, and their head office relocated accordingly in 2007.”

(Informant 34, telephone interview, September 5, 2018)

The alignment of the two systems, i.e., rail management and urban administration, gave them greater motivation to enhance the hub functions of the core cities where they sit and to improve the railway network development in the city-region where they govern.

Institutional adjustments were also witnessed at the local scale. Hubei Provincial Government managed to establish a unique organ with the former MOR – the *MOR-Hubei Province Railway Development Leading Group* (the Leading Group for short) in 2004 – which was a cooperating and coordinating agency apart from the ad-hoc project-oriented MPA. Both the top leaders from the MOR and the provincial government took up office as the group leaders. Under the Leading Group, a *Rail Office* (*tieluban*, 铁路办) was set up in the Provincial Development and Reform Commission. The Office oversees the routine businesses of the Leading Group, focusing on coordinating and organising multi-level governments, institutions and resources within the province to support railway development. This unique set-up was institutionalised from the informal *guanxi* between Hubei Province and the former minister of the MOR (see the Wuhan Railway Station case).

Although the Leading Group faded with the corruption scandal of the minister in 2011, the Rail Office remained as an essential railway management organ at the provincial scale. According to the memoir written by Wang Zujian, the first Executive Director of the Rail Office,

“The Leading Group helped to take some ‘hyper-normal’ actions to boost the railway development in Hubei. [...] I was very honoured to be appointed as the executive director in 2004, and I am very proud to have witnessed the most prosperous stage of railway development in Hubei until my retirement in 2015” (Wang, 2019).

The railway development supportive mechanism in the administrative system of Hubei Province was not suspended in mid-air but rather rooted in the most operational scale. Every municipal government in Hubei was ordered to establish a Rail-Supportive Office (*zhitieban*, 支铁办) to carry out substantive measures to enhance railway development, e.g., tax reduction and exemption, acceleration of land requisition and demolishing, etc. (Hubei Provincial Government, 2005).

“To speed-up land requisition and demolishing for the railway projects, the Rail Office worked with local governments to subcontract workloads, subcontract costs and

subcontract schedules (包任务, 包费用, 包进度) to different working teams,” the Executive Director recalled (Wang, 2019).

Therefore, enlarging railway development and building the railway hub city became the common will of both central and local governments; thus, *the space of dependence* emerged.

6.3.2. *Fragmented land use rights and segregated duties*

The redevelopment and upgrading of the Hankou Railway Station required more land for the planned additional platforms, tracks and waiting rooms. The extra land could be met by using the land of urban villages on the northside of the station. Both the *Constitution (2004 Amended)* and the *Land Management Law 1998* empowered the municipal governments to expropriate or requisition rural land from rural collectives (urban villages) for public interests. Railway development conforms to public interests and therefore can trigger land expropriation and acquisition. According to the scalar division of labour, rural land should be first confiscated and transformed into state-owned land by local governments before being allocated to the MOR.

In terms of land development, the roles between the central and local are clearly defined by the *Land Management Law 1998*, the *Railway Act 1990* and the *Railway Land Use Regulation 1992*. Municipalities are responsible for the planning, development and management of the station vicinity whilst the MOR is accountable for the design, development and operation of the station. Thus, Wuhan municipality was responsible for land expropriation and acquisition, planning and redevelopment of the urban villages on the north side of the station and the renewal of the South Square. The railway authority relied on the municipal government to achieve land for extra rail facilities and was responsible for the development of the station building and railway facilities.

All the land parcels were assigned with different uses. Land management policies before the rail land use reforms (see Chapter 4, Section 4.4 for detail) have prohibited comprehensive development of rail land and thus confined integrated development of the station and its vicinity. Hence, rail land must be used for the railway business, whilst commercial land could not be used for other purposes. The current land use and land management settings had divided the land use rights and duties into different hands. There were action boundaries between different sectors and different scales.

6.4. Scalar Politics

6.4.1. Shared vision of incorporating HSR into the historic station

The idea to build a new HSR line connecting Shanghai and Chengdu via Wuhan was first conceived in the early 2000s. Both the central and local governments agreed to incorporate the new line into Hankou Railway Station. The primary reason was its geographic position. Being as the only passenger station located on the north bank of Yangtze River, Hankou Railway Station was an ideal station to accommodate the east-west railway line as the railway would go along the north bank with no need to bridge over the river (Figure 6-2). Therefore, the limited river-crossing pathways would not be squeezed.

“River-crossing pathways have always been crucial for transport projects in Wuhan. This is because Wuhan is divided by two big rivers and many lakes. The feasible bridge site is not to be found everywhere. Both hydrographic and economic factors must be considered. It applies to both road and rail projects.”

(Informant 3, personal interview, November 1, 2017)

The MOR, Hubei Provincial Government and Wuhan Municipal Government agreed to upgrade Hankou Station to accommodate the new PDL, despite different reasons. One conscious between them was to make the station a landmark project – the gateway of Wuhan and a flagship station of the HSR network. The MOR intended to enhance its transport *node* function, as the transportation capacity of Hankou Railway Station was approaching to its limit. The station had 4 platforms, 7 tracks and 7 waiting rooms which could accommodate 4, 000 passengers (Zhang & Ran, 2007). The anticipated long-term annual passenger volume would reach 25 million after connecting with the HSR, which would undoubtedly challenge the existing capacity of the station (Wuhan Planning and Design Institute, 2008). At the same time, the station had many obstacles for the HSR.

“Hankou Station at that time was rather outdated. The station building structure was outdated, the facilities were outmoded, the platforms didn’t match with HSR, whilst the poor track conditions and the signalling equipment were unfit for HSR. Also, the increased passenger volume would put huge pressure on the existing facilities,” as one railway planner revealed.

(Informant 9, personal interview, May 17, 2018)

“The old station was very ugly, which was not the HSR station we expected. The terrible riding condition would not attract passengers, either,” an urban planner confirmed.

(Informant 19, personal interview, May 27, 2018)

It thus appears that the redevelopment of Hankou Railway Station was a prerequisite for the introduction of the HSR for both technical and transport demand reasons (Figure 6-5 and Figure 6-6).



Figure 6-5. Hankou Railway Station before redevelopment (Exterior)

Source: <https://www.wikiwand.com>



Figure 6-6. Hankou Railway Station before redevelopment (Platforms)

Source: <https://www.wikiwand.com>

Both the provincial and municipal governments viewed the upgrading of the station as an opportunity to accelerate the redevelopment of urban villages and the improvement of the local transport network. The municipal government proposed to develop Jinjiadun area into a sub-urban centre (Wuhan Planning and Design Institute, 2008). The *place* function of the station was their primary concern.

“Hankou Station is different from Wuhan Station and Wuchang Station. Wuhan Station is brand new and sits at the edge of the city in a traditional industrial district of Wuhan, whilst Wuchang Station is in the old town, which is a cultural and educational district. Hankou Station is near the urban centre of Hankou, where commercial and trade activities gather. The development potential was huge.”

(Informant 18, personal interview, May 22, 2018).

“Station areas were often the dirty, disorderly and inferior (脏乱差) places in the city. Hankou Station was no exception. There were many urban villages in Jinjiadun area, especially in the north side of the tracks where urban facilities were dilapidated. The HSR would help to change the stereotyped image of railway stations as it was a more advanced travel mode. We all saw the pleasant environment in Shinkansen trains from the television at that time,” a planner recalled.

(Informant 4, personal interview, November 1, 2017)

“The redevelopment would also allow us to improve local transport network. Jinjiadun area had been divided by the rail tracks, so the traffic in the north-south direction got struck.”

(Informant 21, personal interview, May 20, 2018)

The new PDL and redevelopment of the station were confirmed in the *MLTRNP 2004*. Both the central and local governments started to plan the ‘new’ Hankou Station according to their individual needs. The common goal between them was to build a gateway station for Wuhan and the railway system.

6.4.2. Cooperation to build a gateway station

The construction of Wuhan-Hefei PDL (Wuhan section) began in June 2005. The MOR and Hubei Provincial Government defined architectural styles for the three passenger stations in Wuhan, i.e., Wuhan Railway Station, Wuchang Railway Station and Hankou Railway Station. It was part of their shared strategy to build Wuhan into a railway hub city. As a result, each of them would have a distinct architectural style, representing different features of Wuhan⁵ (Figure 6-7).

“A holistic conception of the architectural styles of all the major stations in Wuhan indicated that the MOR valued the role of Wuhan in the national railway system. The style positioning was very conscientious, and many characteristics of Wuhan were incorporated in the stations’ design.”

(Informant 13, personal interview, May 28, 2018)

According to the station design, Hankou Station was designated to follow the style of its predecessor – Dazhimen Station – in a *New Classic* style (Figure 6-7).



Figure 6-7. Architectural styles of the three passenger railway stations in Wuhan

Source: Wuhan Planning and Design Institute, 2008; (From left to right: Wuchang, Hankou and Wuhan Station)

Whilst Wuhan Municipal Government kicked off the planning of the station area in 2006; the MOR started the architectural design for Hankou Railway Station in 2007. Although the MOR and the municipality undertook their respective responsibilities according to the scalar division of labour, they managed to collaborate to realise their *space of dependence*, which was materialised in the planning and development process. The institutional set-ups (e.g., the Rail Office and the Rail-Supportive Office in Wuhan) provided communicating channels.

⁵ Wuhan Station was designated in the modern style. Its Red-crowned Crane-like architectural shape implies the future of Wuhan and accords with Wuhan’s nickname – hometown of the Red-crowned Crane; Hankou Station was designated in the New Classic style to commemorate its modern history; Wuchang Station was designated in traditional Chinese architectural style to show its respect to the Chu culture.

One of the inter-scalar cooperation was to introduce an inter-city HSR network into Wuhan metropolitan area. The regional HSR network would connect Wuhan with its surrounding cities and helped to achieve the provincial government's goal of city-region development (Hubei Development and Reform Commission, 2007). The Central Government started the amendment of the *MLTRNP* in 2007 since the initially planned length of the railway network was likely to be exceeded before its targeting year (Yang, public media interview, December 1, 2008).

“Adding Wuhan Inter-city Railway Network into the revised MLTRNP was not a difficult task. It was in line with the central's strategy. Both the releasement of the ‘Rise of Central China Plan’ by the State Council in 2006 and the set-up of the ‘Resource-saving and Environment-Friendly Society’ in 2007 acknowledged the importance of Wuhan Metropolitan Area. So, when the NDRC incited us to enlarge the national railway network, we thought it was reasonable to incorporate Wuhan,” a planner from the former MOR specified. *“The local governments also had the motivation to develop the inter-city network. It was not only a national strategy but also a common aspiration between the central and local.”*

(Informant 34, telephone interview, September 5, 2018)

Wuhan Inter-city Railway Network was added to the amended *MLTRNP* together with six other inter-city networks (e.g., Chengdu-Chongqing, Changsha-Zhuzhou-Xiangtan, etc.) in 2008. As a result, Hankou Railway Station was designated to accommodate some of the inter-city lines. Therefore, another two platforms and four tracks were added to the station upgrading plan (Wuhan Planning and Design Institute, 2008). Both its *node* and *place* functions would be enhanced.

The upgrading project of the station began in 2008. The railway authority managed all railway-related projects, including the renovation of the station building, platforms, waiting rooms and the construction of a new station entrance in the northside of the station and other facilities for HSR (e.g., signal cabins and underpass exits). As the railway service had to keep running during the upgrading, temporary waiting rooms and a ticket lobby were a must. The municipal government helped to address this issue.

“Wuhan municipality helped to coordinate with Caishen Plaza, the nearest building to the station, to provide space for the railway business temporarily. Without the municipality's intervention, it would be hard to persuade the plaza, since we needed to

use both the ground level and the first level of the building for more than 1.5 years,” stated by a manager at the station.

(Informant 14, personal interview, June 4, 2018)

As a reciprocal arrangement, the MOR allowed the municipality to build four tunnels underneath the railway lines to enhance station area accessibility (Figure 6-8). It was not as easy as it looks, as one municipal transport planner exclaimed,

“For us, railway lines are just the ‘big moat’ ranked only second to the Yangtze River. To plan a road crossing the railway line, either by a bridge or by a tunnel, is extremely difficult. It often needs the approval from the MOR, rather than the local railway bureau. But in Hankou Station case, the railway authority gave us the green light.”

(Informant 20, personal interview, May 27, 2018)



Figure 6-8. Four tunnels in Hankou Railway Station Area

Source: Prepared by the author based on Google Earth base map

The total investment for station upgrading was CNY 1.44 billion and was all financed by the central government. After the renovation, the station now has 10 platforms, 20 tracks and can accommodate 8, 000 passengers. As supplementary, the municipal government had allocated CNY 1.84 billion to redevelop the surrounding area of the station. Those municipal projects included the redevelopment of the South Station Square, improvement of the adjacent roads

and building a metro station under the basement level of the station square. The municipal government spent CNY 33.6 million to rebuild the external façade of the surrounding buildings to ensure a consistent architectural style with the station and the overall artistic atmosphere in the station area. Intriguingly, they even removed the Second Ring Road overpass and built a new tunnel to place the ring road underneath the ground in front of the station, which cost another CNY 0.3 billion. The reason for this was just to ensure that the renewed station could be seen by the pedestrian and the ground level traffic (Wuhan Planning and Design Institute, 2008). Based on the joint efforts of governments from both the central and local scales, another gateway station was built in the inner-city of Wuhan.

6.4.3. Boundaries of action in station area redevelopment

Governments at all levels placed high expectations on the redevelopment of Hankou Railway Station, not only for multi-scalar (i.e., urban, inter-city and inter-regional) accessibility improvements but also for the great potential to gather urban activities in the station area. They planned to make full use of the inner-city location of the station. The provincial and municipal governments regarded it as a great opportunity to carry out extensive urban renewal plans around the station. They initiated to build a new station square and a north entrance for the station, which was applauded by the MOR. Wuhan Municipal Government started station area planning early in 2006 and designated an area of 0.569 km² for redevelopment (Figure 6-9). The *Transport and Landscape Comprehensive Plan of Hankou Railway Station* was finalised in 2007, which was also agreed by the MOR (Wuhan Planning and Design Institute, 2008).

“Urban village renewal was the priority of Wuhan at that time, and we were planning the citywide urban village renovation plans⁶. The development of the north station square could be incorporated into the plan, and it would help to trigger the renovation projects near the station, especially for those in the north of the station.”

(Informant 16, personal interview, May 25, 2018)

⁶ The citywide urban village renovation plan was launched in February 2009, marked by the issuing of the Notice on Pushing Forward Urban Village Renovation Plan by Wuhan Municipal Government.



Figure 6-9. Planning area of Hankou Railway Station

Source: Prepared by the author based on Google Earth base map

Figure 6-10 shows the land use status before the redevelopment in the defined station area. In general, land on the southside of the station was already developed except for one commercial land parcel in the southwest corner, whilst the northside of the station was underdeveloped. According to the station area land use plan, urban village renovations would be mainly carried out on the northside (Figure 6-11).

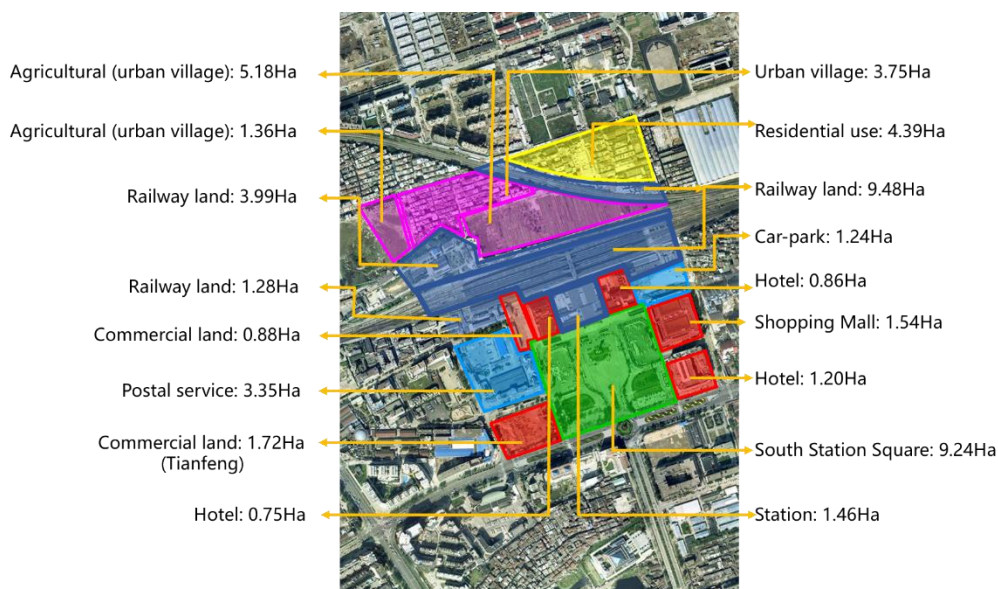


Figure 6-10. Land-use status in Hankou Railway Station Area (2007)

Source: Wuhan Planning and Design Institute, 2008

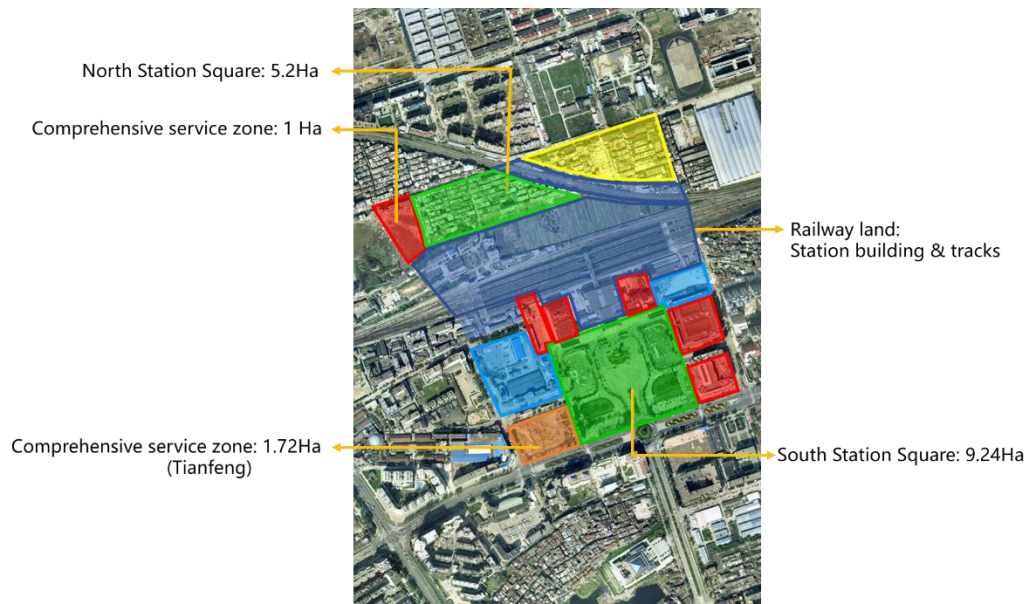


Figure 6-11. Land-use plan in Hankou Railway Station Area

Source: Wuhan Planning and Design Institute, 2008

Station area redevelopment was assigned to different parties: Jiangnan District Government carried out land expropriation for both the expanded station and the new station square; the municipality was responsible for station square development; the MOR carried out the station redevelopment; urban village renovation programs were transferred to private developers on an open bidding basis.

Jiangnan District Government promptly completed the land expropriation not only because of their acquaintance with the local situation but also because they could circumstantially switchover the scalar strategies. Specifically, they could, on the one hand, *scale-up* the project in the name of the ‘unrivalled’ public interests to obtain land from urban villages forcibly. On the other hand, they could *scale-down* the significance of the financial cost as it would be ‘reimbursed’ by the MPA. It is because railway station redevelopment was part of the national project under the MPA and all the cost would be reckoned as the local governments’ share of the joint adventure.

“Housing demolition and resident relocation were certainly difficult. We tried to persuade the sitting residents to understand the importance of the railway project. If it didn’t work, we purposefully and firmly told them that their apartments would be demolished by all means and the compensation is set in line with the national policies.”

Therefore, they must accept the demolition and relocation plan. If it still didn't work, we paid them more. Anyway, this was a mission must be done,” noted by an official who knew the demolition and relocation program.

(Informant 15, personal interview, May 25, 2018)

The MOR started station redevelopment soon after the demolition of the urban villages. The main construction works were finished in February 2010, and the station retained regular operation at the same time. Their prompt action was primarily due to the intention to reduce impacts to the operation of the station and to accommodate the soon-to-be-opened HSR lines.

On the contrast, the planned North Square was put aside by the municipality (Figure 6-12), even though land expropriation for the square was done concurrently with the station redevelopment. The reason lied on the shift of the municipality's scalar strategy as the station development was *scaled down* to a municipal project after the land was expropriated in the name of the national project.



Figure 6-12. Undeveloped North Station Square of Hankou Railway Station

Source: Author

“The development of the square was the municipal government's job. The municipal government must finance the project. It didn't belong to the MPA.”

(Informant 23, personal interview, May 20, 2018)

“Since the south square was ready to use and most of the passengers were from the south, there was no hurry to open the north entrance. There were also few economic activities in the northside of the station due to the old urban villages and the slow-moving renovation projects. [...] More importantly, the municipal government must give overall consideration to all municipal projects, and they had more urgent tasks.”

(Informant 24, personal interview, May 21, 2018)

Wuhan Municipal Government granted the urban village renovation projects to the developers since those projects could not be *scaled-up* to the national scale, even though they were included in the station area plan. In fact, incorporating those projects into the station area plan was just the municipal government’s strategy to promote the projects. As one developer commented,

“It would be impossible for the government to carry out so many urban renewal projects, considering the huge investment and extremely long payback period. Developers would do a better job. Projects like station redevelopment and the introducing of HSR could be used as ‘selling points’ to attract developers. But of course, it depends on the market situation, and not all of us buy the story.”

(Informant 29, personal interview, May 26, 2018)



Figure 6-13. An urban village renovation project on the northside of Hankou Railway Station

Source: Author

The progress of urban village renovation programs was somewhat uncontrollable as each program had to negotiate with the sitting residents (Figure 6-13). A media investigation has revealed that the citywide renovation projects launched in 2009 were in various rates of progress by 2012 (Zhang, 2012).

6.4.4. Unreached cooperation and the missed transport complex

Being in the inner-city area, Hankou Railway Station was a perfect place to optimise both the *node* and *place* functions of the station. The municipal government planned to combine all transport modes that they could manoeuvre, i.e., buses, taxis, private cars and metro, into one transport complex to enhance the intraurban accessibility.

“We have studied various station area plans from abroad, for example, the EuraLille in France and Nagoya Station in Japan. What they have in common is the convenient intra-city transport and the concentration of multiple transport modes. Those successful stations are not only transport junctions but also urban complexes. We wanted to build one, too. Hankou Station filled all requirements for such a comprehensive station at that time.”

(Informant 19, personal interview, May 27, 2018)

The MOR welcomed the plan as both projects would enhance the intra-urban accessibility of the station.

“Hankou Station was an important node in the railway network, which was connected with the HSR, the inter-city network and the conventional railway. So, we thought the improvement of the intra-urban accessibility was critical to make the station a real comprehensive transport hub.”

(Informant 11, personal interview, May 19, 2018)

Nevertheless, it was challenging to build the transport complex on the rail land or to include the railway station into the complex. The reason was same as in the Wuhan Railway Station case, that is, the scalar division of labour with station area development between the MOR and the municipality and the confined comprehensive land use policy. The municipality then shifted its attention to the explorable land in the station vicinity, which was within reach of the local scale.

According to the land use status at that time (Figure 6-10), the only undeveloped land on the southside of the station was planned for commercial use. It had already been granted to a

developer – Tianfeng Industry Development Co., Ltd. (Tianfeng for short) (Wuhan Planning and Design Institute, 2008). Although the land had not been developed yet, the municipality must negotiate with Tianfeng to fulfil the transport complex idea since all the planning requirements were set before the land sale thus not considering the redevelopment of the station. The municipality wanted to change the planning requirements for the land plot for Tianfeng to incorporate bus, taxi, private cars and the underground metro (Wuhan Planning and Design Institute, 2008). According to their initial plan, there would be an underground merchandise street at the basement level of the complex, which would be connected with the metro station hall. The station hall would be further channelled to the railway station (in the north) and Jinjiadun Coach Station (in the south) via pedestrian underpasses. A car park was also planned at the basement level. The ground level of the building would be used for bus stations and taxi bays. The complex was a vital component of the municipality's goal to build a transport hub at Hankou Railway Station, just as their fellows had done in Japan and Europe. However, this plan came to nothing as an agreement with the developer was hard to reach, and the pressure from the scalar division of labour was enormous.

“The plan for the basement level would bring greater passenger volume and therefore, more benefits to Tianfeng. The main impacts for them were on the ground floor as all the space would change to public transport. As compensation, the municipality would like to amend the planning requirements to offer them with some ‘breakthroughs’ on height and FAR restrictions,” an official from the municipal planning bureau explained. *“It was a tough negotiation, which was totally different from the open bidding in a land granting stage when different developers compete for the land, and the municipality can set the planning requirements. Now, Tianfeng became the de-facto owner and had strong negotiating power over the government. After several rounds of negotiation, the municipality’s quid pro quo still could not satisfy the developer.”*

(Informant 18, personal interview, May 22, 2018)

Wuhan municipality was reluctant to make significant changes to the planning requirements for the private developer since the developer's requests exceeded too much of the municipality's expectation. The land use supervision and auditing pressure from the upper scale daunted the municipality's 'breakthroughs' in building a transport complex.

“The legal and policy risks of this attempt were too high. The State Land Supervision Bureau or the National Audit Office would question us for the reason to make such a

big change of the planning requirements for a private developer. They wouldn't understand our consideration of the railway station. Anyway, the transport complex was a nonessential component for the railway station, so we gave up."

(Informant 20, personal interview, May 27, 2018)

6.5. Planning and Development Outcomes

6.5.1. Site selection

Hankou Railway Station was chosen as the station accommodating the new HSR to make full use of its inner-city location. The station sits in Jinjiadun area, which is a very liveable and dynamic place and is only 20 min's walk from the CBD. Amenities like schools, hospitals, shopping malls, offices and residential communities are strewn around the station. By incorporating PDL and the inter-city HSR network into Hankou Railway Station, the overall efficiency of the railway network has been enhanced as the inner-city location of the station is most convenient for passengers.

A consensus between multi-scalar actors was easily reached in the Hankou Railway Station case. It was not only because of the inner-city location of the station but also originated from the concordant *place-dependent interests* of multi-scalar actors. The MOR, Hubei Provincial Government as well as Wuhan Municipal Government all held the will to develop Wuhan into an HSR hub. Therefore, multiple stations would be built, and both trunk HSR lines and inter-city lines should be introduced into the stations. Hankou Railway Station had the advantages to enhance both *node* and *place* functions for all parties.

6.5.2. Transport connection

Hankou Station now services both the conventional trains and high-speed trains running on trunk PDLs and inter-city lines. Shanghai-Wuhan-Chengdu Line has linked Wuhan with other city-regions (e.g., Yangtze River Delta and Chengdu-Chongqing City-region). Wuhan Inter-city Railway Network has linked Wuhan with its surrounding cities, forming a 1-2-hour transport circle. Furthermore, Hankou Station was connected with Tianhe International Airport by Metro Line 2 at the end of 2016, which has further extended the outreaches of Wuhan. The conventional railway network works as supplementary to the HSR and inter-city network, meeting the various travel demands.

The station is also well-connected with various means of intraurban transport. It is on the north of the Second Ring Road and is linked with many roads, big and small. The construction of the

Figure 6-14. Route map of Wuhan Metro Line 2

Source: Adapted from <https://zh.wikipedia.org>

Nevertheless, a more compact and integrated transport organisation, i.e., a transport complex incorporating various means of transport was hard to achieve since the municipality failed to reach an agreement with the developer. Tianfeng developed the land based on their original plan – a furniture plaza was completed in 2015. As a result, the bus station was placed along the road near the plaza (Figure 6-15).



Figure 6-15. OUYAD Plaza (developed by Tianfeng) and the separate bus station

Source: Author

6.5.3. Land use planning

As an inner-city station, the upgrading of Hankou Railway Station has induced urban (re)development opportunities, i.e., urban village renovations. However, it is quite different from station redevelopment in Europe, where the redevelopment of the station and its vicinity are integrated (Peters, 2009). Urban village renovation projects in Hankou were independent of the station redevelopment, and thus they were not synchronised with each other.

On the northside of the station, both the urban village renovation program and the development of the North Station Square have not gone quite to plan. Land expropriation for the railway station expansion was completed promptly before the start of the project in early 2008. The

station related construction was finished at express speed in 2010. Nevertheless, the urban village renovation projects were still under construction whilst the north square was set aside at the time of the field reconnaissance in 2018. More than ten years thus have passed since the releasement of the citywide urban village renovation plan and the approval of the station area plan (Figure 6-16). The apparent out-of-sync processes originated not only from the institutional division that assigned the duties to different hands of authorities but also from the divergent pursuit of multi-scalar actors.



Figure 6-16. The remaining urban village residential buildings

Source: Author; photo taken *at Jindun St*

6.6.Summary

The redevelopment and upgrading of Hankou Railway Station saw both concordant scalar relations and the fragmented governance. In general, the municipality worked as the core player to coordinate with various actors from other scales, though an integrated balancing of interests at different scales was hard to achieve. Figure 6-17 shows the institutional/policy settings, decision-making, and planning and development outcomes of the Hankou Railway Station.

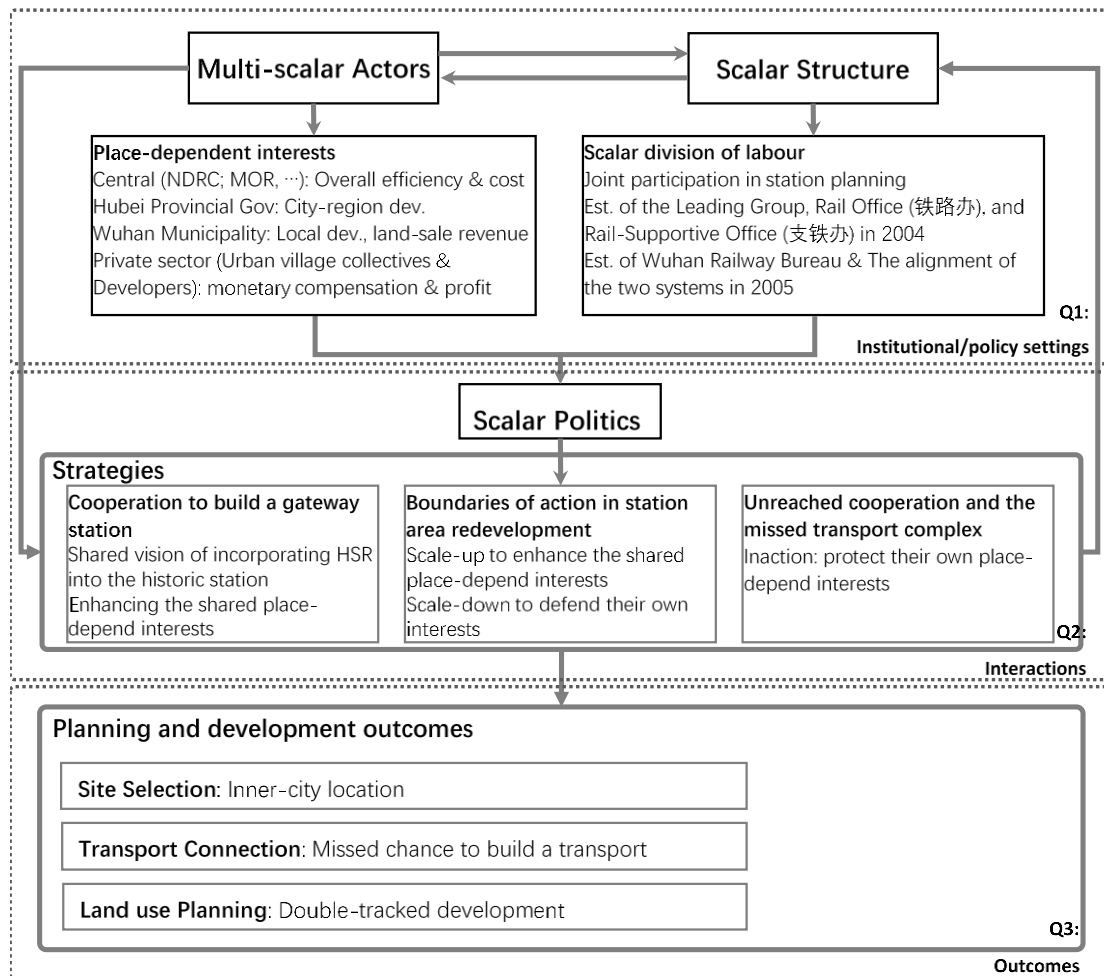


Figure 6-17. A detailed picture of the decision-making and planning outcome for the Hankou Railway Station

Source: Author

Unlike the contentious siting process in Wuhan Railway Station case, a consensus between multi-scalar actors was easily reached in the Hankou Railway Station case. It was not only because of the inner-city location of the station but also originated from the concordant *place-dependent interests* of multi-scalar actors. What is more, the once effective informal network that facilitated the building of the *space of engagement* in the Wuhan Railway Station case was further institutionalised and reinforced this time, i.e., the establishment of the Leading Group, Rail Office (铁路办) and Rail-Supportive Offices (支铁办).

As an inner-city station, the upgrading of Hankou Railway Station has induced urban (re)development opportunities, i.e., urban village renovations. However, it is different from station redevelopment in Europe, where the redevelopment of the station and its vicinity are

integrated and synchronised (Peters, 2009). Urban village renovation projects in Hankou were independent of the station redevelopment, that is, they were on double-tracks. Both the central and local governments remained within their comfort zone of business defined by the institutional segregation of property rights. The reason was the lack of integration initiatives of both sides.

Multi-scalar actors have paid more attention to the *node* functions of the station, i.e., the introduction of two levels of HSR networks, the construction of the metro line and underground passage to the coach station. The *place* function, on the contrary, was just manifested in the unified external façade of the buildings. The municipality tried to work with the private developer to enhance the integration of the *node* and *place* function by building a transport complex but failed to reach an agreement. It indicates that the state actors could no longer use administrative power to control market player but had to rely on market rules to ‘scale-out’.

Both Wuhan Railway Station and Hankou Railway Station were (re)developed in the leapfrog railway development era under the regime of the MOR (see Chapter 4). It seemed that the planning outcome had realised the interests of authorities at both the local and central scales. But, the unrealised integrated development and the loss of land value capture opportunities, accompanied by the rapid large-scale HSR development have increased the financial burden of the central government. They are characterised by oversize, over-placement, unitary function, and facility deficiency, which are typical stations (re)built in that era and has eventually led to the rail system reform started from 2013.

7. Case Study 3: The New Hanyang Railway Station

7.1. Introduction

Chapter 7 examines the process of planning the New Hanyang Railway Station. The case study shows how the participation of an international stakeholder complicates the decision-making process in HSR station planning. The chapter also aims to dissect the scalar politics in the post-railway reform era. Section 7.2 outlines the basic information of the station, e.g., location, operating railway lines, and the planning background. Section 7.3 profiles the multi-scalar actors, scalar settings and structural adjustments. Section 7.4 inquiries into the site selection, intraurban transport planning and station area planning processes. The switchover of expectations, rules and scalar strategies of the various players have been identified accordingly. Section 6.5 specifies the planning and development outcomes and discusses their relations with scalar politics. Section 6.6 presents the main findings of the chapter.

7.2. Background of the New Hanyang Railway Station

The New Hanyang Railway Station is a planned railway station at the scheduled Fuzhou-Wuhan-Xi'an-Yinchuan PDL, according to the *MLTRNP 2016* (National Development and Reform Commission, 2016a), the *13th Five-Year Development Plan of the Modern Comprehensive Transportation System* (State Council, 2017) and *Wuhan Railway Hub Plan (2016-2030)* (China Railway Corporation & Hubei Provincial Government, 2017). The final plan positions the station in Houguanhu, Hanyang District, to the west of the Third Ring Road (Figure 7-1). It is adjacent to the Sino-French Eco-City (SFEC), which is a planned new town co-funded by the French Government and the Chinese Government. Currently, the chosen site is still underdeveloped, mainly serving for agricultural use (Figure 7-2).

The birth of the New Hanyang Railway Station can be traced back to Hubei Province and Shaan'xi Province's strong desire to connect both provincial capital cities (i.e., Wuhan and Xi'an) with HSR in the early 2010s. In January 2011, the two provinces jointed to request the former MOR and NDRC to plan and build a Xi'an-Wuhan PDL. Hubei Province also submitted proposals to the National People's Congress (NPC) during the *Two Sessions* in 2011 and 2012 respectively. Their constant effort finally got repaid in September 2012 when the MOR agreed to start the planning and research for the Hubei part of the PDL – the Wuhan-Xiangyang-Shiyan Line, which was about to be incorporated into the Wuhan Inter-city Railway Network.

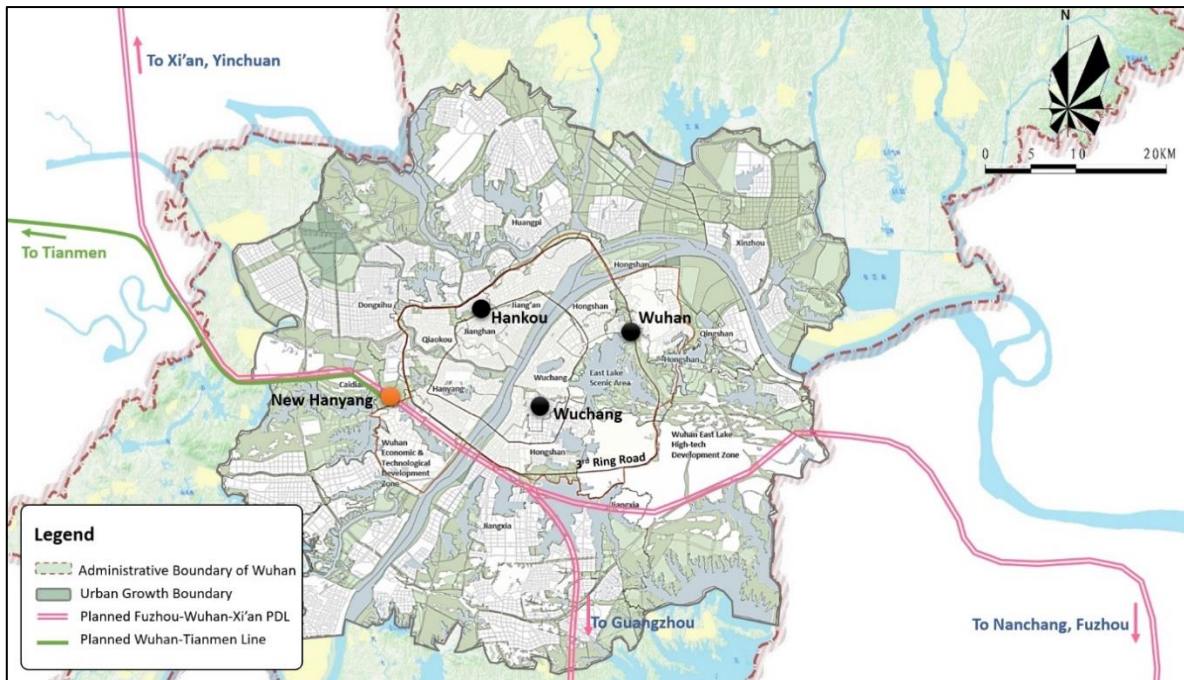


Figure 7-1. Planned location and railway lines of the New Hanyang Railway Station

Source: Author

With MOR's pre-authorisation, Wuhan municipality started the preliminary site selection for the new station in 2013 (Wuhan Planning and Design Institute, 2017). Formal site selection began in 2014 and finished in 2017 with the launch and end of the amendment for *Wuhan Railway Hub Plan* respectively (China Railway Corporation & Hubei Provincial Government, 2017). The Central Government further confirmed the station plan in 2019 with the approval of the FSR (feasibility study report) of Wuhan-Xi'an PDL by NDRC.



Figure 7-2. Current landscape in the defined station area (the New Hanyang Railway Station)

Source: Author

At the time of writing this thesis, the site selection was finished, but the station area planning was still underway. According to the CRC's plan, the prophase construction was planned to begin in 2021. The new station was envisioned to have 16 platforms and 30 tracks, taking up an area of approximately 1 km² (Wuhan Planning and Design Institute, 2017). It will be a dedicated HSR station, acting as a primary station serving for trains running in the northwest-southeast direction (Figure 7-1). Main HSR lines that go through the station includes Fuzhou-Wuhan-Xi'an-Yinchuan PDL and two inter-city lines (Wuhan-Qianjiang and Wuhan-Tianmen). It also assists trains running to the south, i.e., to Changsha and Guangzhou. According to the *Wuhan Urban Rail Transit Network Plan Revision (2014-2049) (2016 Amended)*, three metro lines are going through New Hanyang Railway Station, including Line 4, Line 11, and Line 17 (Wuhan Municipal Government, 2016).

7.3. Multi-scalar Actors and Scalar Structure

Substantive planning of the New Hanyang Railway Station began after the 2013 MOR reform; and therefore, the CRC has been overseeing its planning. The station was a precondition and part of the SFEC project and was initially positioned within the defined eco-city area. The French Government established an SFEC Project Strategic Committee and sent representatives (the French representatives hereafter), on behalf of the French Government, to worked with the local governments in China to carry out the joint project, including planning for the eco-city and the station. The New Hanyang Railway Station case thus incorporated players from multiple scales (Table 7-1).

Table 7-1. Main players in the New Hanyang Railway Station case

Organisation Tier	Main Stakeholders	Role
International level	French representatives	Eco-city and station planning
Central level	CRC; NDRC; MLR; MHURD	Policymaking and plan approval
Local level	Hubei Provincial Government	Coordinator
	Wuhan Municipal government	Wuhan overall development
	District-level governments (Hanyang & Caidian)	Local development

Source: Author

7.3.1. *New players and new rules of the game*

The New Hanyang Railway Station case is different from the previous two cases, not only because of the involvement of an international payer – the French Government but also because

of the reshuffle of power among multi-scalar actors caused by the rail sector reforms since 2013. The rule of inter-scalar interactions thus is different from that observed in both Wuhan Railway Station and Hankou Railway Station.

The marketisation and corporatisation of the former MOR have changed the *scalar division of labour* in the rail sector. Theoretically, the CRC has become an enterprise, thus no longer a governmental agency. The CRC must control the cost and pay more attention to operational efficiency and investment revenue when they plan and develop railway projects. Although it still relies on the central funding, the scale of the central funds could never be on a par with the four-trillion investment plan in the leapfrog development period. In line with the institutional reform of the rail authority, the Central Government has carried out two scalar strategies, i.e., rail business financing reform and rail land deregulation, to support the independent operation of the CRC.

As for the financing reform, the Central Government encourages private investment in railway development and intends to break the monopoly of the CRC (State Council, 2013a, 2014a). The Central Government set up the National Railway Development Fund to normalise the central subsidies to railway development, which would help to terminate the CRC's overly dependency on central funding (National Development and Reform Commission, 2014). These financial reforms would bring down the CRC's haphazard investment and enhance the engagement of private investors and the local governments. The increased investment would ensure a greater voice for private investors and local governments in decision-making.

As for the management of land on which railway lines are built, the policy orientation of the Central Government is to remove the constraints of rail land comprehensive development. Both the *State Council's Guidelines on Rail Land Comprehensive Development* (State Council, 2014b) and the *MHURD's Notice on Implementing Rail Land Comprehensive Development* (Ministry of Housing and Urban Rural Development, 2015) have broken down the barriers of commercial development of rail land. Also, the segregation of land use rights between the railway authority and the local government has been removed. The relaxation of land use regulations for rail land has changed the division of interests among multi-scalar actors. Comprehensive development of the station area would despoil local governments' vested interest as local governments used to have an exclusive gain of land value appreciation in the station vicinity but now must share with the railway authority. As a result, the local government may be reluctant to conduct comprehensive development. On the contrast, the railway authority

tends to expand comprehensive development and seek for land development opportunities in site selection. The CRC worked out the *Rail Land Management Regulation* in 2015 to specify the importance of comprehensive development and to strengthen the efficient development of explorable rail land (China Railway Corporation, 2015). The CRC has also introduced policies to encourage its subordinates (regional railway bureaus in particular) to actively participate in local urban master plan-making to enlarge their opportunities of possessing more explorable land (China Railway Corporation, 2016a, 2016b).

The railway leapfrog development period saw unreasonable planning and development of many HSR stations. Problems include but are not limited to oversize, over-placement, unitary function, and facility deficiency (Chen & Wei, 2013; Dai et al., 2013; Wang et al., 2013). To address these problems, the Central Government has released a series of ‘suggestions’ for future HSR station planning and development. These suggestions focused on limiting the size and distance (to urban areas) of the stations, enhancing multi-transportation integration and promoting travellers’ travel quality and efficiency (National Development and Reform Commission, 2016b; National Development and Reform Commission et al., 2018). However, these policies are mainly instructional, or guiding principles thus lack viable effective measures. Local governments still have the intention to position stations in the urban periphery and build big stations. The reason is twofold. On the one hand, big projects like HSR stations are taken by local governments as precious opportunities for pushing their urban boundary outwards, thus growing bigger and grabbing more land for further urban development. On the other hand, HSR stations are still viewed as a symbol of the cities’ economic status and the local cadre’s achievements in their official career. The willingness to bear more construction costs or to alienate more explorable land to the railway authority may give them more bargain chips in station planning decision-making.

The planning of the New Hanyang Station is unique as it is closely related to the SFEC, which is co-funded by the French Development Agency (on behalf of the French Government) and the Chinese government (including the central, provincial and municipal governments). Both countries intended to use French expertise in the field of sustainable urban development to build a model eco-city in China. The French Government has also invited French enterprises, e.g., Groupe Renault, Citroen and Fives Group, to invest in the eco-city to enhance its development. The French representatives’ opinion is thus a critical input to the HSR station site selection and the eco-city planning. The French representatives are keen to assist the local governments in conceiving a sustainable city with their experiences in urban and HSR planning.

As Martin Aubry, the then special representative of the Ministry of Foreign Affairs for the partnership with China pointed out, “[t]his will be an extraordinary opportunity to showcase the French expertise in sustainable city construction” (Guislain, 2016).

The French representatives promoted compact and intensive land use. They wanted to bring the TOD (Transit-Oriented Development) philosophy to the eco-city planning. According to their planning vision, the railway planning would be combined with the whole eco-city project, and the new HSR station should be connected with major activity centres by urban rail transit, including metro and tram (Informant 22, personal interview, May 20, 2018).

The Chinese Government had established a Coordinating Committee to facilitate the implementation of the project. The committee was made up of officials from thirteen central ministries, including the MHURD, Ministry of Foreign Affairs, NDRC, Ministry of Commerce, etc. Therefore, the SFEC is essentially an international cooperation project supervised by the Chinese Central Government, whilst the local governments collaborate with the French representatives to conduct specific works. The local plan needs the final approval from the upper scale.

The institutional and policy changes in the post-railway reform era have restructured the *scalar division of labour* in railway station planning; thus, the rule of inter-scalar interaction has changed. However, the interaction outcome is hard to predict as multi-scalar decision-making is an inherently variable process, and various scalar strategies may be used.

7.3.2. Roles and power reshuffling in urban transit planning

Wuhan Municipal Government plays a significant role in planning metro lines for the New Hanyang Railway Station. Its duty has been defined by the *scalar division of labour* in urban rail transit planning. Before 2013, the decision-making power for urban rail transit was concentrated in the central government. Both the plans (for the whole city) and FSRs (for one single line) should be examined and approved by the State Council. The 2013 reform of delegating review and approval power to local governments reduced the Central Government’s control over rail transit planning and development (State Council, 2013b). Since then, provincial governments took charge of the approval for FSRs, whilst the NDRC was responsible for the examination of plan renewal and expansion for cities that already had rail transit. Only the initial rail transit plans (cities applying for the first rail transit) should be examined and approved by the State Council. The 2015 rail transit planning and approval reform further simplified the examination and approval procedure. Specifically, the State

Council would no longer examine any rail transit plans, and the NDRC and MHURD would review all plans (either initial plans or renewal plans). FSRs should be approved by provincial governments (National Development and Reform Commission & Ministry of Housing and Urban Rural Development, 2015). According to the procedure, the municipal government has always been the initiator to make and implement the plans. The examination and approval department (the State Council, NDRC, MHURD or the provincial government) examines whether the applying city meets the rail transit development standards, e.g., population, economic output, traffic density, etc.

Since Wuhan has already developed its first metro in 2004, its rail transit renewal plans do not need the examination of the State Council after 2013. Its sub-provincial administrative status ensures that the provincial government could easily approve its FSRs and adjustments to the single line. Up to now, Wuhan has made four rounds of rail transit plans since it inaugurated the metro system, i.e., Phase One (2006-2012), Phase Two (2010-2017), Phase Three (2015-2021) and Phase Four (2019-2024). The metro lines in Caidian and the eco-city area were planned in the third stage. Wuhan's rail transit system is in a period of rapid development⁷.

Both the CRC and the French representatives' opinions are indispensable for incorporating metro lines into the HSR station. The French representatives' decision-making power was enhanced by the agreement between the Chinese Government and the French Government to map out the blueprint of the eco-city jointly. The Master Plan of the Sino-French Eco-city was co-produced by the municipality and the French representatives, together examined by the French Project Strategic Committee and the Chinese Coordinating Committee before officially approved by Hubei Provincial Government.

On contrast, district governments are excluded from the formal decision-making of metro line planning and HSR station planning. The reason is that the district government does not have full autonomy in urban planning, land granting, financial revenue and expenditure management, etc.

“The land belongs to the municipality. The projects (HSR station and the eco-city) are municipal projects, and the municipality invests and plans these projects. The municipality seldom asks for opinions from the districts.”

⁷ Up to January 2020, the total operating length of Wuhan Metro has reached 406 km, ranking No. 7 among all Chinese cities. It is only behind Beijing, Shanghai, Guangzhou, Chengdu, Shenzhen and Nanjing.

(Informant 20, personal interview, May 27, 2018)

Although both projects were asserted to bring developmental opportunities to local development, the local stakeholders, at least their representative – the district government – has been excluded from the decision-making.

7.4. Scalar Politics

7.4.1. A key project with conflictive expectations

When Wuhan Municipal Government began site selection for the station accommodating the new PDL connecting Wuhan with Xi'an in 2013, Hanyang was the only old town (among the three ancient towns in Wuhan) left without a passenger railway station. The old Hanyang Railway Station was used for freight transport. Both the provincial government and the municipality were inclined to build an HSR station in the old town (either in Hanyang District or Caidian District⁸). An assessment of the existing stations and Yangtze River-crossing pathways done by the CRC indicated that upgrading Hanyang Railway Station to serve the new PDL was infeasible. First, the new line would bring too much traffic to the already confined space in the old station area. Second, trains had to go across the already saturated Wuhan Yangtze River Bridge since it was the only adjacent rivers-crossing pathway if the old station was chosen. The CRC and the local governments agreed to build a new station in Hanyang.

Wuhan municipality proposed to build the station in Caidian District, which is an outer suburban district and a less developed area in Wuhan. The new station would trigger place-making for the backward district and realise a balanced distribution of railway stations in Wuhan. The ample construction land in Caidian and the straight route proposed by the municipality were welcomed by the CRC thus both rail and urban pursuits would be achieved.

“We have to balance the ‘three old towns’ in every respect. Hankou has Hankou Station, while Wuchang has Wuchang Station and Wuhan Station. Both of them are connected with HSRs. So, people in Hanyang also want one. The construction of Fuzhou-Wuhan-Yinchuan PDL gave us such a chance to meet their needs,” pointed out by one urban planner.

(Informant 24, personal interview, May 21, 2018)

⁸ The old Hanyang Town is now divided into two districts – Hanyang and Caidian, according to the current administration partition in Wuhan. Caidian District has been called Hanyang County until 1992 when it became one district of Wuhan municipality. Hanyang District has been one of the main urban districts and has remained its name since the establishment of the People's Republic of China in 1949.

“It seems Caidian has been ‘forgotten’ by previous municipal projects. Relatively speaking, it is lagging way behind other districts. The HSR station will not only meet their travel needs but more importantly, bring development opportunities for Caidian.”

(Informant 25, personal interview, May 21, 2018)

The new station indeed brought new development opportunities for Caidian. In July 2013, the then French Prime Minister Jean-Marc Ayrault wrote to Chinese Prime Minister Li Keqiang to express his longing to jointly build an eco-city in Wuhan to enhance the two countries’ cooperation in sustainable urban development. His proposal derived from a series of high-level reciprocal visits between France and Hubei Province. The Chinese Central Government was pleased with the joint-development proposal, and an area of 39 km² in Houguanhu area in Caidian (Figure 7-3) was chosen by the French Government as the site for the planned SFEC after the preliminary reconnaissance in December 2013. Then, a formal co-building agreement was signed between the two countries witnessed by both top leaders in 2014.

“Wuhan municipality presented five optional sites. The French representatives preferred Houguanhu because there was going to have a new HSR station. They thought the station would be used as a key element for the eco-city.”

(Informant 33, personal interview, May 26, 2018)

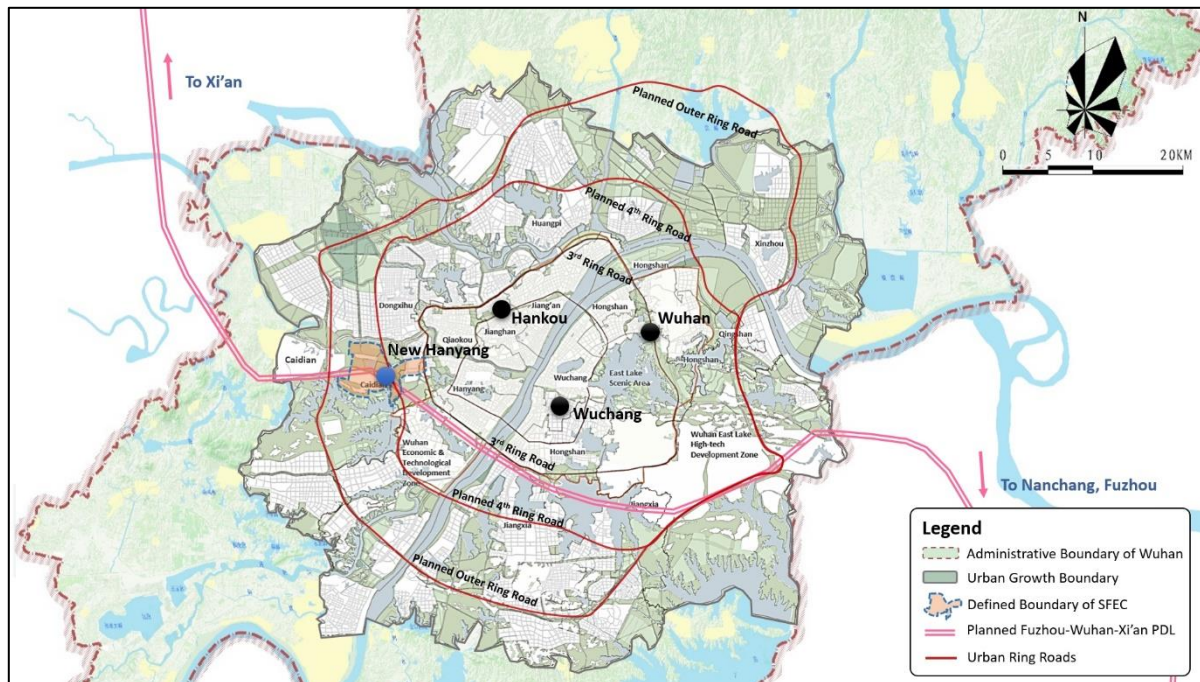


Figure 7-3. Planned location of the new station and the SFEC in Wuhan

Source: Author

When the substantive site selection began in 2014, Wuhan municipality proposed to position the station in the centre of the designated eco-city and near Gaoluohu River (the Gaoluohu Scheme; Figure 7-4). They intended to build an underground station, which had an advantage in land saving.

“By siting the station under the river and part of the railway line under Shi Lake, this scheme would neither occupy any existing construction land nor exert any influence on local transport. More importantly, it would benefit the land use layout of the whole area.”

(Informant 20, personal interview, May 27, 2018)

“We wanted to build a landmark in the centre of the eco-city. An underground HSR station would be fascinating. You see Futian Station⁹ in Shenzhen? We planned to build something like that in Wuhan.”

(Informant 6, personal interview, November 16, 2017)

The CRC rejected this proposal because the construction cost would be high, and the engineering conditions would be too complicated.

“Building an underground station is harder than you think. The hydrogeological condition was complicated, which would drive up the financial and technical input. Besides, their plan would induce speed constraints for the train because of the short turning radius of the route,” pointed out by the railway planner.

(Informant 10, personal interview, May 18, 2018)

⁹ Shenzhen Futian Railway Station is an underground station. The construction began in 2008 and finished in 2015.

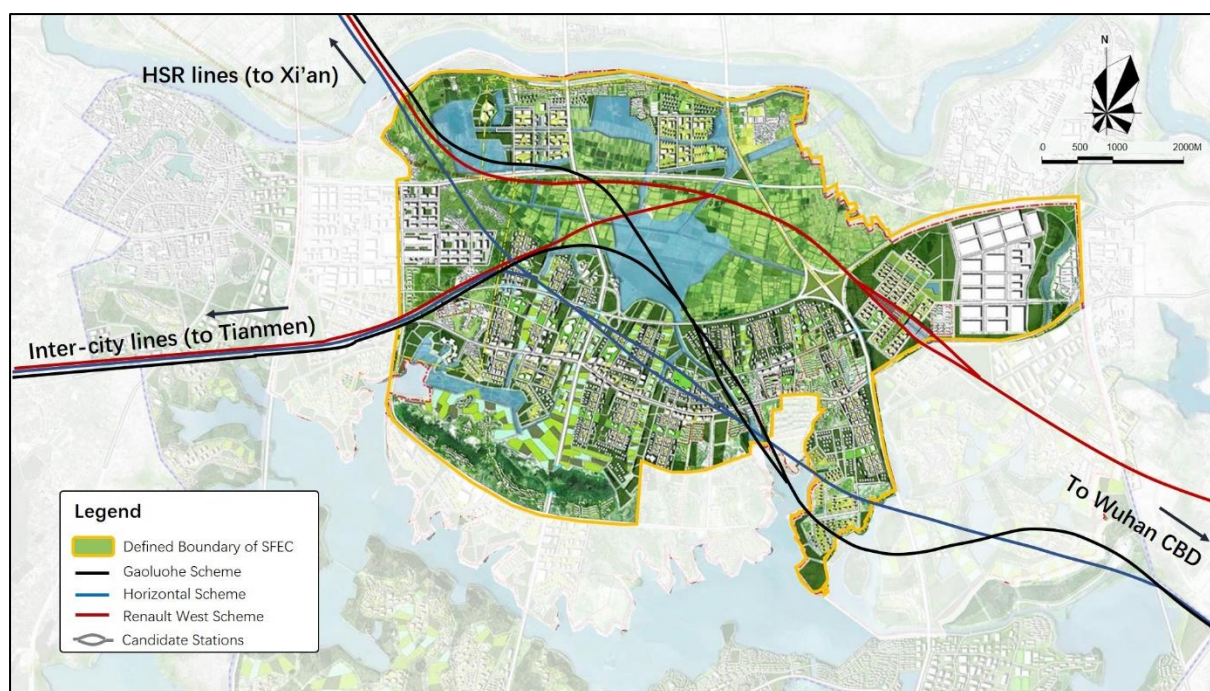


Figure 7-4. Site selection schemes for the New Hanyang Railway Station

Source: Base map from AREP; mapped by author

The CRC recommended an alternative ‘Horizontal Scheme’, which would fully meet the technical turning radius requirements. Under this scheme, the railway line would be horizontal and parallel to the planned main streets in the eco-city, whilst the station would be positioned along with the planned Xintian North Street near Gaoluohu River (Figure 7-4) (Wuhan Planning and Design Institute, 2017).

Nevertheless, “[t]here would be limited exploitable land on the north side of the station and its horizontal layout would disturb the land use layout in the eco-city, which was the last thing the municipality wanted to see.” The municipal government argued strongly against the railway authority as “[t]heir (CRC) plan would totally derange the land use layout in the eco-city. Much land would be impacted.”

(Informant 20, personal interview, May 27, 2018)

The participation of French representatives since 2015 has made the site selection even more complicated.

“The French representatives didn’t want the railway tracks and station to disturb the land use layout in the eco-city as in the CRC’s scheme, neither did they want the rail to

endanger the lake and river as in the municipality's proposal. They worried that both schemes did not conform to the sustainable development idea of the SFEC."

(Informant 22, personal interview, May 20, 2018)

They raised another option for the new station – Renault West Scheme, which would locate the station in the north of the eco-city, by the side of the existing metro station – Huangjinkou (Metro Line 4) and the Renault automobile factory. The initial idea was to follow the TOD (Transit-Oriented Development) philosophy and combine railway planning with the whole eco-city project. However, neither the municipality nor the CRC was pleased with the French representatives' proposal. They accused the French request of being divorced from the Chinese reality.

"The French representatives didn't know the Chinese situation well. The scale of station platforms and lines in their proposal couldn't convey the usual passenger surges in China, especially during holidays and festivals. Big squares on both sides of the station are necessary. Their concentrated and compact layout is unpractical," complained by a railway planner.

(Informant 13, personal interview, May 28, 2018)

Wuhan municipality was concerned with the interference with the planned urban village reconstruction projects.

"There was plenty of explorable lands, why should we build the station in the built-up area. Besides, we already had a plan for urban villages renovation there. The French proposal would squeeze our planned space for the relocated households. It would also disturb the existing road network and build-up environment in Huangjinkou area," an urban planner demonstrated their concerns.

(Informant 17, personal interview, May 18, 2018)

An agreement between the three scales was hard to achieve as each of them had their own considerations of the *node* and *place* functions of the station: the municipal government planned to build a landmark in its 'West Gateway' – Caidian; the French representatives intended to incorporate the compact and sustainable development philosophy into the station plan; the railway authority concerned more about technical and financial feasibility.

7.4.2. Competition in siting HSR station in the forgotten old town

Since an agreement between the three parties on siting the New Hanyang Railway Station was hard to achieve, Wuhan Municipal Government came up with a totally new idea when they were making the *Comprehensive Transportation Plan of Wuhan* in 2015 (Wuhan Planning and Design Institute, 2015). Drawing on the successful experience of Hongqiao Integrated Transportation Hub in Shanghai, the municipality was keen to build an air-rail integrated hub in Wuhan. Therefore, they proposed to degrade New Hanyang Railway Station into an inter-city railway station by relocating and incorporating Xi'an-Wuhan PDL into Tianhe International Airport.

“Air-rail integration, which can form a multi-layer transport system, is the future trend. Both transport modes can benefit from each other. Look at Shanghai Hongqiao and Zhengzhou Xinxing or Frankfurt in Germany, all of them have successfully built an integrated transport hub. [...] Importantly, not every city has the opportunity to do so. Wuhan has the chance to make it happen.”

(Informant 22, personal interview, May 20, 2018)

“Wuhan once had a chance to incorporate Beijing-Wuhan-Guangzhou PDL with Tianhe Airport, but we lost it. It would probably be the last chance,” some planners even called for air-rail integration in journal articles (Zhang et al., 2015).

To win more support, the municipality passed their plan to the CRC, considering the air-rail integration would be attractive to the railway authority. The CRC acknowledged the necessity of air-rail integration but thought Tianhe Airport was not suitable for the new PDL connecting Wuhan with Xi'an.

“We have to build more tracks to incorporate the PDL into the airport, which is not in the main direction of the PDL and is too far away from the urban centre,” explained by the railway planner.

(Informant 13, personal interview, May 28, 2018).

Then the municipality turned to the French representatives. They thought the scale-down of the station would help to realise the French proposal to position the station within the eco-city and integrate it with the metro station, as a degraded station would need less land. To their surprise, the French representatives strongly disagreed with this proposal, and they specified that the

precondition for locating the eco-city in Caidian was the truck line HSR station, rather than an inter-city station.

“They were angry. They even asserted that they would issue a diplomatic note to the Chinese Central Government if New Hanyang Railway Station is degraded into an inter-city railway terminal and Xi’an-Wuhan PDL is removed from the eco-city,” a planner noted.

(Informant 22, personal interview, May 20, 2018)

French representatives’ strong opposition forced the municipality to give up their proposal. However, there was still hope for the municipality’s desire for an air-rail integrated hub as the CRC’s later plan of the Yangtze HSR¹⁰ was going to introduce HSR into Tianhe Airport (National Development and Reform Commission, 2019).

Wuhan municipality realised that bridging the common interests between scales was the key to reach an agreement. Therefore, they proposed another site for the new station. The station would be placed in Kuaihuoling (Kuaihuoling Scheme) to the south of the French representatives’ proposed site (Figure 7-5). The new candidate site would meet the French representatives’ desire to preserve the ecology (river and lake) and land use layout in the eco-city. Although the station would be placed outside the defined boundary of the eco-city, it is adjacent to the eco-city.

“The French representatives were aware that the new scheme would save the explorable land in the eco-city. It would also help to accelerate the development of their project because otherwise the railway station and track construction would induce a long wait before they could implement the eco-city development plan,” pointed out by a planner.

(Informant 20, personal interview, May 27, 2018)

The municipal government persuaded the CRC by indicating that the new site would have sufficient explorable land and would be closer to the Third Ring Road and thus the main urban area. The municipal government also promised to optimise the station’s connection with urban

¹⁰ The Yangtze HSR, or Yangtze River Passageway, is a proposed HSR passage. It will run in an east-west direction largely parallel to the Yangtze River, connecting major cities along the river, e.g., Shanghai, Nanjing, Hefei, Wuhan, Chongqing and Chengdu. It largely parallels the old line (Shanghai-Hefei-Wuhan-Chengdu PDL) except for the section in Central Hubei. Announced in 2016 as an important component of the national ‘eight vertical and eight horizontal HSR network’, the passageway will comprise multiple trunk and branch lines, including those currently under operation as well as those under planning or construction.

transits and the road network. Above all, the new plan would meet all the railway technical requirements, e.g., long turning radius of the route and no need to bridge-over or down-traverse rivers and lakes.

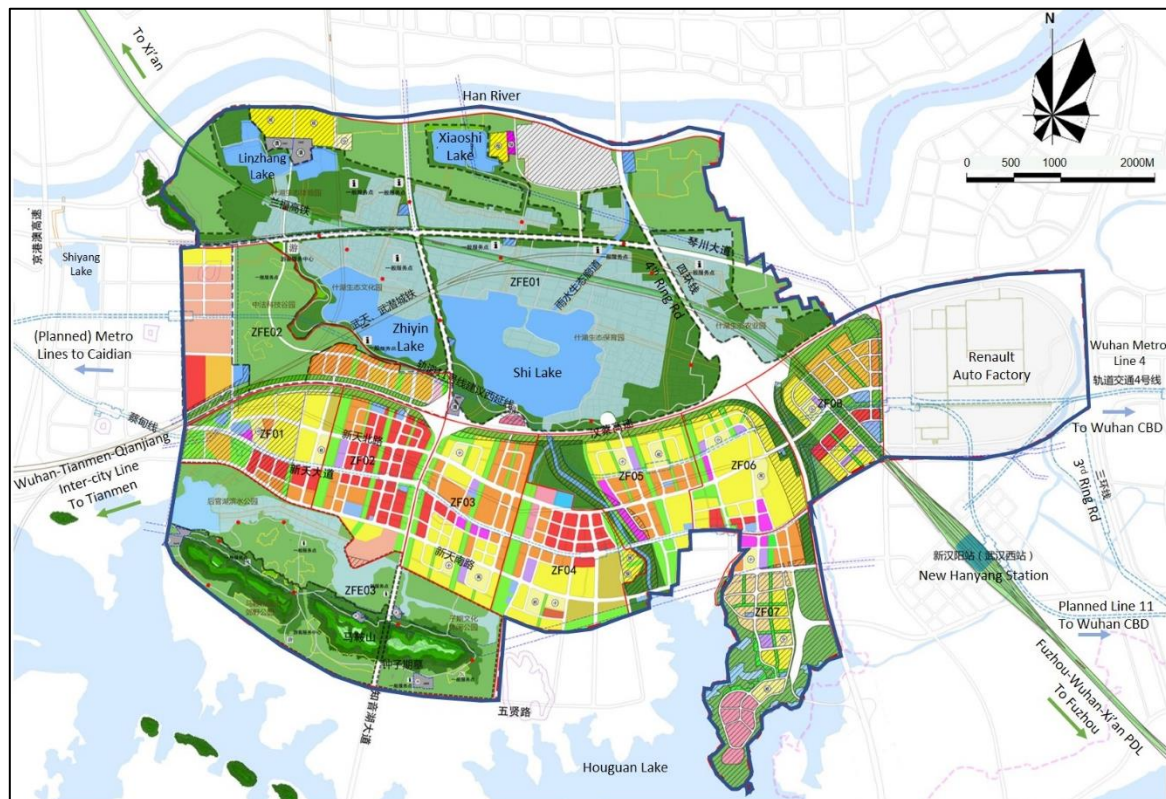


Figure 7-5. Kuaihuoling Scheme – the final site for the New Hanyang Railway Station

Source: Adapted from *Detailed Regulatory Plan of Sino-French Eco-city (2018)*

“The CRC knew well that if the station is located outside the eco-city, the future station area development will be easier. It is because they won’t have to negotiate with the French representatives anymore. It will become a ‘domestic’ project,” explained by a planner.

(Informant 22, personal interview, May 20, 2018)

It seems that the municipal government was just a mediator between the two parties, but in fact, the new scheme contained the municipality’s deep scalar strategy. The proposed station site is composed of agricultural land, forest, pond wetland and villages. According to the current *Wuhan Urban Master Plan (2010-2020)*, *Wuhan Land Use Plan (2006-2020)* and *Wuhan Metropolitan Urban Growth Area (1+6) Spatial Development Strategic Implementation Plan*,

this area is one of the six green wedges of Wuhan. The only construction land in this area is dispersed in the eight urban villages¹¹ (Figure 7-6).

“The municipality and Hanyang District were considering aggregating and resettling these villages. They were planning to revise the master plan to carry out urban development in this area. Still, their intention was short of a reasonable basis to persuade the central ministries, for example, the MHURD and MEP.”

(Informant 23, personal interview, May 20, 2018)

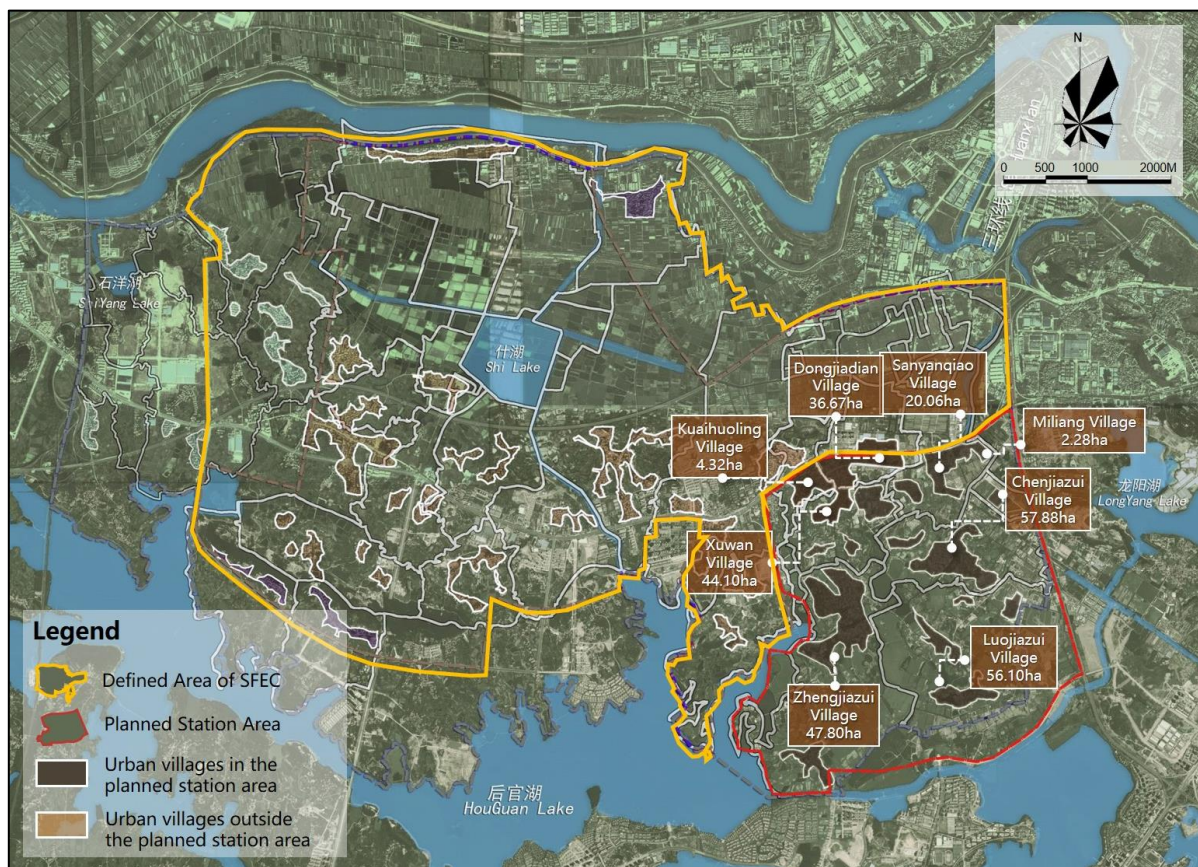


Figure 7-6. Eight urban villages in the planned station area

Source: Wuhan Planning and Design Institute, 2017

By locating the new station in Kuaihuoling, the municipality could scale-up the development plan of this area, which would be more convincing to revise the master plan. The national railway station project and the international eco-city project would both be helpful. Therefore, a win-win agreement was achieved between players from the three scales. The site selection for New Hanyang Railway Station was specified in *Wuhan Railway Hub Plan (2016-2030)*.

¹¹ The eight urban villages include, Dongjiadian, Sanyanqiao, Miliang, Chenjiazui, Luojiuzui, Zhengjiazui, Xuwan and Kuaihuoling.

The CRC and Hubei Provincial Government approved it in 2017 (China Railway Corporation & Hubei Provincial Government, 2017). It later received the Central Government's endorsement with the approval of the FSR of the project by the NDRC in 2019.

7.4.3. Local desire bound with the supra-local project and the delayed delivery

Caidian is an outer suburban district, which is separated from the core urban area of Wuhan by extensive agricultural land and ecological land, thus lacking efficient rapid transit to the municipal centre. Both the new station and the SFEC sit in the interzone between the district centre and the municipal core. The District Government expected that any new transit lines linking the new station or the eco-city were likely to be extended to the urban centre of Caidian.

“Outer suburban districts need large projects, for example, development zones, HSR stations and other large infrastructures. Even if these projects cannot directly bring economic development, they are likely to trigger infrastructure improvement. Caidian knows well that both the HSR station and the eco-city are such powerful projects and the municipality will increase investment in the area.”

(Informant 20, personal interview, May 27, 2018)

The Wuhan Municipal Government also intended to enhance the transport connection between Caidian and the core urban area. It had already planned a tram line (Line 24) in 2012 to traverse major built-up areas in Caidian before the project approval of the HSR station (hb.sina.com, 2013). The tram line was planned to begin construction in 2013 and complete in 2016. However, with the forthcoming HSR station in Caidian in 2013, the municipality gave up the tram idea and planned to upgrade it into a metro line. According to their plan, the new metro line – Line 11 – would link the HSR station with Caidian, Hanyang, Wuchang and the Optics Valley. Besides, the existing Line 4 would be extended to New Hanyang Railway Station, whilst Line 17 in the long-term plan would also go through the station. Thus, New Hanyang Railway Station would become an intersection of three metro lines (Figure 7-7). The idea was incorporated in the *Urban Rail Transit Development Plan (Phase Three: 2015-2021)* and was approved by the NDRC in 2015 (National Development and Reform Commission, 2015).

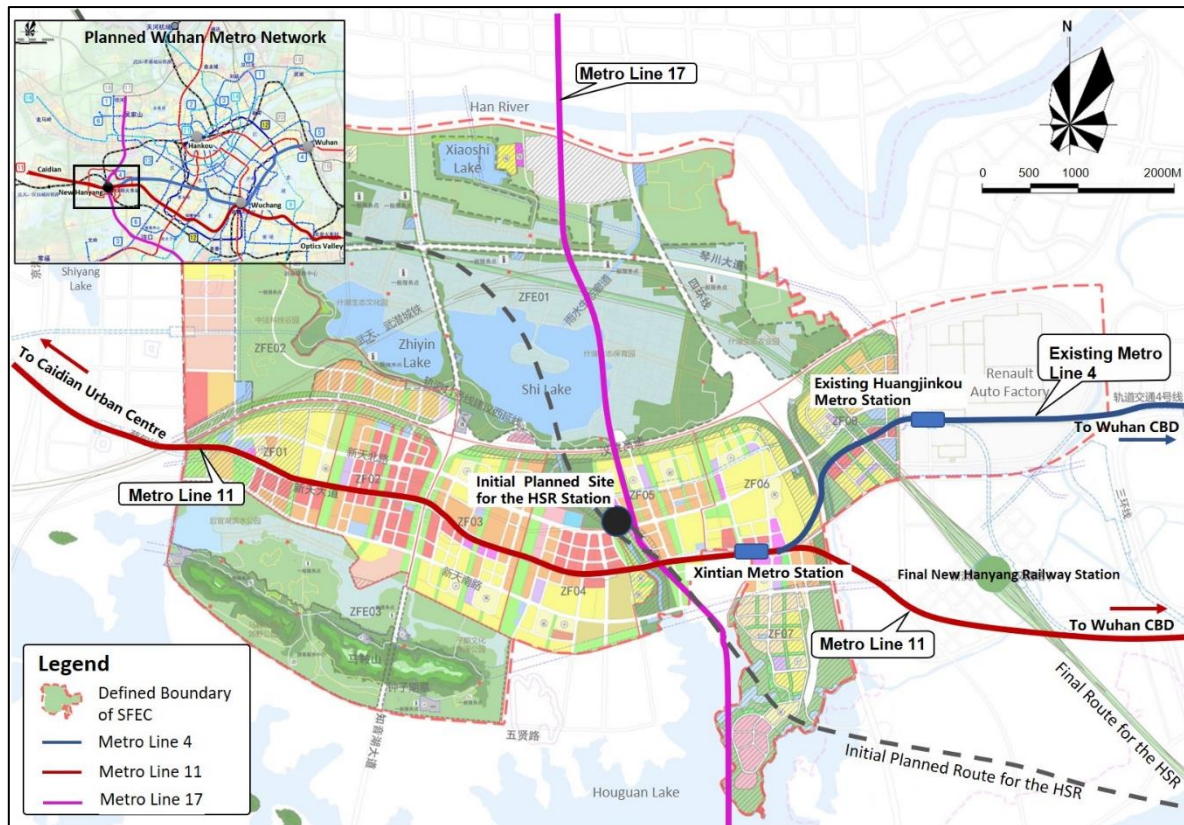


Figure 7-7. Long-term urban rail transit plan of the New Hanyang Station and SFEC (2015 Version)

Source: Wuhan Urban Rail Transit Network Plan Revision (2014-2049); Base map from AREP; mapped by author

In the planning process, the Wuhan Municipal Government tried to scale-up the metro projects. The scaling-up was twofold. On the one hand, the municipality tended to make a significant transport hub, incorporating multiple metro lines and various transports. On the other hand, it attempted to bind the possible metro lines with critical projects, e.g., the HSR station (a national project) and the SFEC (an international project). Although the two strategies often coincided with each other, they were different: the former aimed at enlarging the physical/functional (*node* and *place*) scale of the projects, whilst the latter targeted at lifting the planning scales/importance of the projects. By doing so, new landmarks or gateways could be built to enhance the achievements in the local cadres' official career, or the initial small project (an extra metro line) could be more likely to be approved, or both.

Nevertheless, the municipality's initial metro plan positioned the HSR station at Gaoluohu, under the municipality's initial site selection proposal. As a result, the project came to naught

because of strong objections from the CRC and French representatives on the site selection of the HSR station.

“Since it was planned as the intersection of three metro lines, the indeterminacy of the new HSR station site impeded the construction of all the three metro lines.”

(Informant 20, personal interview, May 27, 2018)

According to the *Urban Rail Transit Development Plan (Phase Three: 2015-2021)*, the planned extension work of the existing Line 4 would begin in 2016 (National Development and Reform Commission, 2015), but the site selection for New Hanyang Railway Station was still under discussion at the scheduled time. No one knew when the three parties would reach an agreement. Residents from Caidian began to grumble over the late coming of their first metro line. Many posted their complaints online.

“It was too hard to have one metro line in Caidian. We are the only district in Wuhan that have no connection with the metro network. That is disappointing. The planned HSR station and the eco-city didn’t bring any substantive benefits to us but delayed the first metro in Caidian.”

“I think even a tram line would be better than nothing. If the plan were not changed, we would at least be able to take the tram to the city now. What a shame...”

“Can we just build one metro line first? I don’t need the HSR.”

Sources: Public comments extracted from online microblogs

The public’s strong criticisms speeded up the municipality’s action to launch the construction of the metro line. To simplify the traffic organisation, the municipality decided to extend the existing Line 4 to Xintian and bypass New Hanyang Railway Station to link the Caidian Line (the west part of the initial Line 11). The remaining part of Line 11 and the long-term planned Line 17 would be introduced to New Hanyang Railway Station (Figure 7-8). The construction for the extended Line 4 started in August 2016 and was finished in September 2019, and Caidian was thus linked by Wuhan Metro.

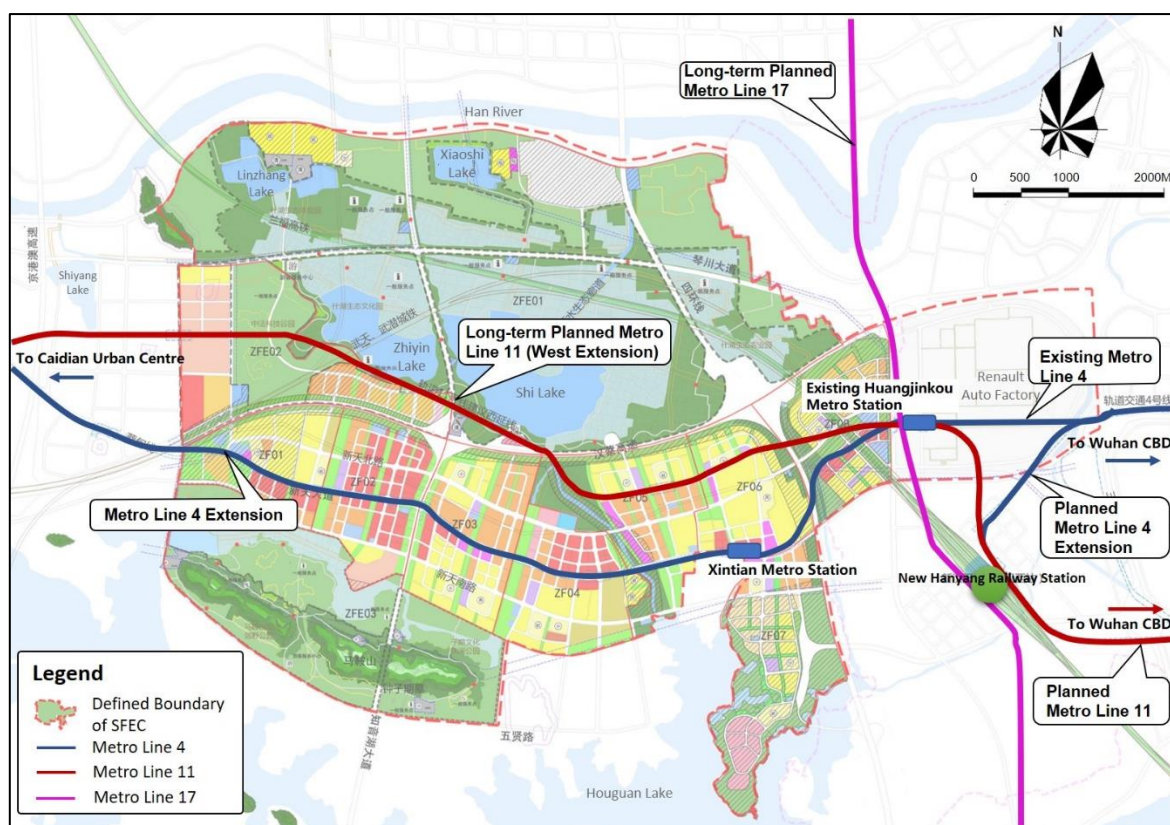


Figure 7-8. Current urban railway transit plan of the New Hanyang Station and SFEC
Source: Wuhan Urban Rail Transit Network Plan Revision (2014-2049) (2016 amended);
Base map from AREP; mapped by author

When site selection for New Hanyang Railway Station was preliminary confirmed in *Wuhan Railway Hub Plan* (China Railway Corporation & Hubei Provincial Government, 2017), the municipality quickly started reorganising the rail transit network to introduce all possible metro lines to the station. Their timely adjustment had incorporated the Line 4 extension project (linking the HSR station with Line 4) into the latest *Urban Rail Transit Development Plan (Phase Four: 2019-2024)* (National Development and Reform Commission, 2019). Accordingly, there will be three metro lines going through New Hanyang Railway Station, including Line 4, Line 11 and Line 17. The new HSR station thus has been scaled-up to an important transport hub.

7.4.4. Cooperation or competition: Towards the integrated development?

Wuhan municipality started land use planning for the New Hanyang Station area in 2016 even before the final approval of site selection by the central government. An area of 12.03 km² (or, 1202.98 ha.) near Houguanhu Lake was designated by the municipality for the new station development (Figure 7-9). The defined area is characterised by high vegetation coverage and

affluent hydrographic net, with a water coverage of 22.7% (i.e., 272.92 ha.). It is currently composed of agricultural land, forest, pond wetland and the previously mentioned eight villages. These traditional natural villages have been developed with a chronic lack of joined-up thinking and planning, and as a result of which poor infrastructure and environmental pollution have become significant barriers for their sustainable development (Figure 7-10 and Figure 7-11). As each village covers a small area and is apart from each other, it would be efficient and economically feasible to aggregate and resettle them. The municipality's promote action on land use planning derived from its strong desire to scale-up and legitimate the planned urban village reconstruction projects and to ease the ecological restrictions in the current urban master plan and environmental plans.

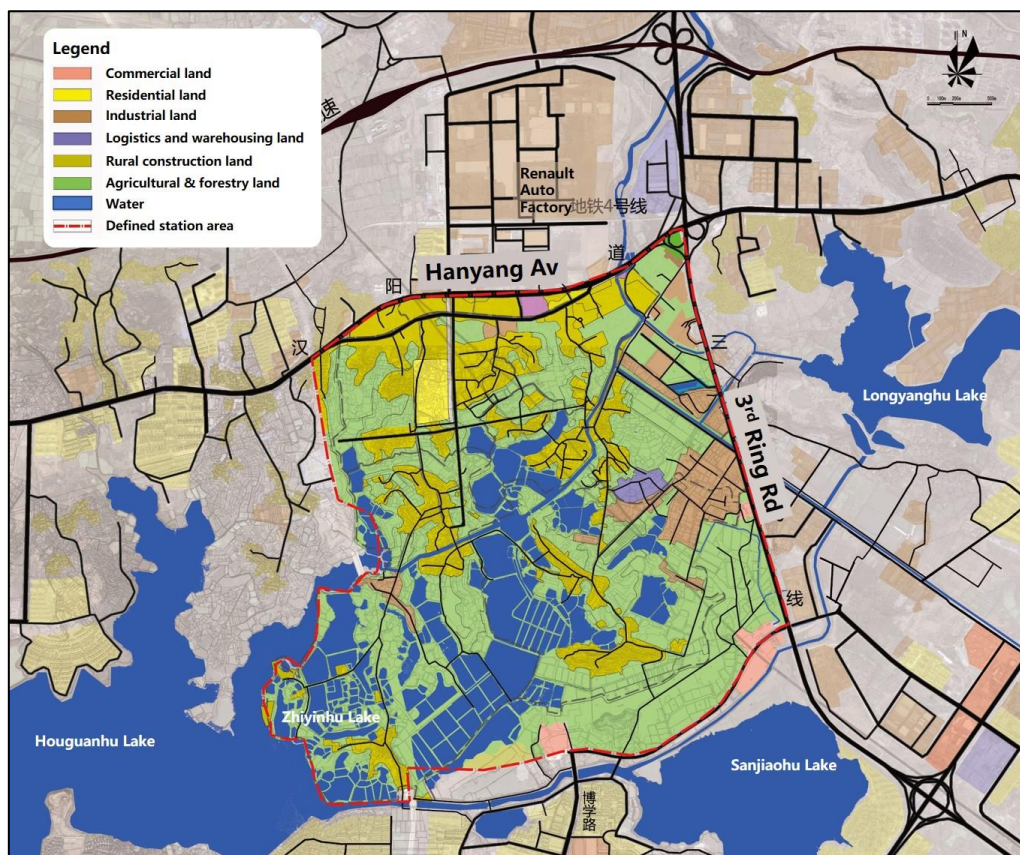


Figure 7-9. Land-use status in the defined station area (the New Hanyang Railway Station)

Source: Wuhan Planning and Design Institute, 2017

With a consensus on expanding explorable land around the new station, the CRC supported the municipality in making land use plans of the station area and thus winning the central ministries' (e.g., the MHURD, MEP and MNR) approval of plan revisions.

“Based on the railway authority’s estimation of future passenger volume and railway facility requirements, we worked out the land demands in the station area. A throughout consideration of both urban development and railway development demands made our land use plan more convincing.”

(Informant 23, personal interview, May 20, 2018)



Figure 7-10. Streets in the villages in Houguanhu area

Source: Author



Figure 7-11. Environmental pollution in the villages in Houguanhu area

Source: Author

According to the latest land use plan for the station area, the municipality has augmented the planned construction land from 143.79 ha. in the existing urban mater plan to 445.04 ha., which reaches 37.0% of the whole area (Table 7-2).

Table 7-2. Land use arrangement in the defined station area (the New Hanyang Railway Station)

Type of land use	Land area (ha.)	Percentage
Construction land	445.04	36.99
<i>Residential land for relocated urban village households</i>	51.87	4.31
<i>Urban residential land</i>	60.13	5.00
<i>Residential land for relocated urban village households</i>	51.87	4.31
<i>Land for public administration</i>	15.98	1.33
<i>Land for transportation</i>	184.77	15.36
<i>Land for public facilities</i>	0.53	0.04
<i>Land for squares and green space</i>	61.80	5.14
Water and non-construction land	757.94	60.01
Total	1202.98	100

Source: Adapted from Wuhan Planning and Design Institute (2017)

The station area land use plan sets a high expectation for a comprehensive hub and business centre by using the large passenger flow and business vitality brought by the new station and the SFEC. Seven functional zones are envisioned for the 12.03 km² land (Figure 7-12). They are a comprehensive transport hub zone in the centre, a comprehensive service zone around the hub, an automobile industry service zone in the north, an innovative research and development site in the east, an ecological tourism zone in the south, an auto theme park in the west, and an urban living zone in the sandwich layer (Wuhan Planning and Design Institute, 2017). It is acclaimed that the new station will be comprehensively developed, aiming to build an urban

complex, which is different from all existing stations in Wuhan (ibid.). In other words, it will not become another enclosed transport hub but will be integrated with the urban space. The consciousness between the local and central governments as well as the French representatives, have promoted the intensive land use and compact layout in the station area. With all the land use and planning restrictions on integrated development removed, the integrated planning and development of New Hanyang Station seems very promising.

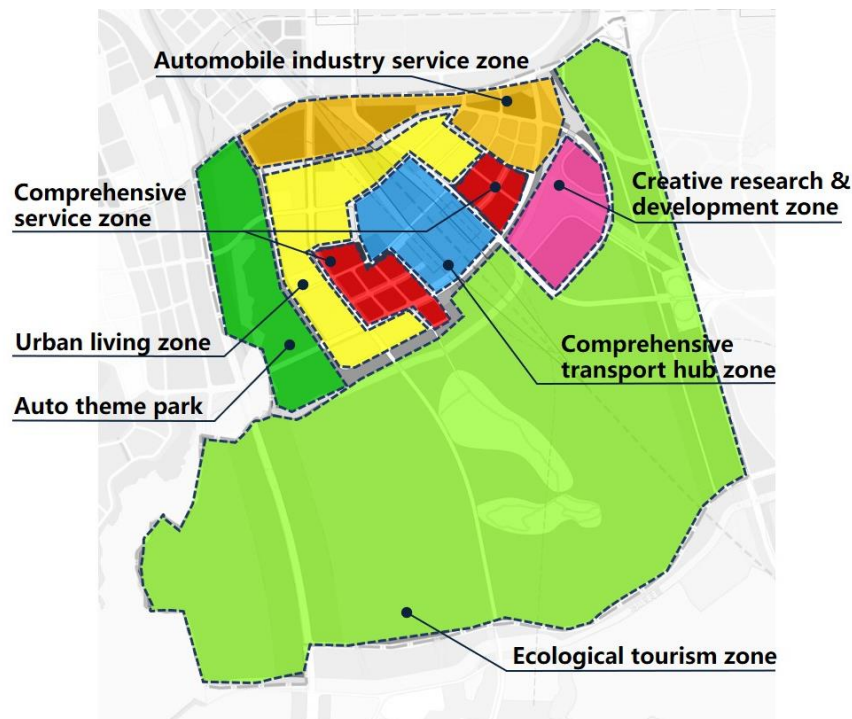


Figure 7-12. Land use layout in the defined station area (the New Hanyang Railway Station)

Source: Adapted from Wuhan Planning and Design Institute (2017)

However, an agreement on the location and scale of land for comprehensive development between the CRC and the municipality has been hard to achieve. Whilst comprehensive development is an itch for broadening ancillary revenue to the railway authority, the municipality concerns about the loss of the vested land sale income. Both have organised experts to discuss and verify the scale and form of comprehensive development, and of course, in a direction favourable to their sphere. It will thus take a long time for them to reach an agreement.

“We have urged the municipality to define the range and scale of land for comprehensive development for many times, but they never discuss substantive issues with us,” complained by an official from Wuhan Railway Bureau.

(Informant 14, personal interview, June 4, 2018)

“The CRC did ask for explorable land near the station, but it is not the time as the location for the station has just been chosen,” one local official explained.

(Informant 20, personal interview, May 27, 2018)

“Railway bureaus are ordered to take part in local urban plan making, especially in station area planning. However, the implementation of this policy depends largely on the will of local governments. Comprehensive development is easier said than done,” clarified by a railway expert.

(Informant 36, personal interview, June 1, 2018)

7.5. Planning and Development Outcomes

7.5.1. Site selection

The New Hanyang Railway Station was finally sited in Houguanhu in the western periphery of Wuhan, out of the Third Ring Road. Currently, the chosen site is still underdeveloped, mainly serving agricultural use and ecological conservation. At the same time, it is a promising area as the SFEC, i.e., a planned new district co-funded by the French Government and the Chinese Government is under construction in the area. Both the SFEC and the HSR projects have been placed great expectations on local urban development and the westward expansion of the city. The site selection was a result of scalar politics based on technological, economic and developmental considerations with place-dependent interests at various scales.

Drawing lessons from previous rounds of HSR station development (e.g., Wuhan Railway Station and Hankou Railway Station), both central and local governments have changed their expectations towards the station development. The national railway company no longer pursues fast construction and building large-scale stations but rather concentrates more on the efficiency of the HSR network and the potential land development opportunities. The municipality has realised that the urban development driving effects of the station are not spontaneously achieved but rely much on their extra inputs. On the contrary, the segmentation effects brought by railway tracks have become their major concerns. A new station thus could mainly be used to expand the urban area and serve as an excuse for municipal infrastructure expansion (e.g., metro lines and road networks). As for underdeveloped areas like Caidian, a project with less driving effects is better than none. So, in the New Hanyang Railway Station

case, the HSR project was primarily used by the municipality as a balancing strategy to patronise the less developed areas.

7.5.2. Transport connection

Intraurban transport planning of the New Hanyang Railway Station is still ongoing. The new station is planned to have 16 platforms and 30 tracks. It will be a dedicated HSR station, serving for both trunk HSR line (Fuzhou-Wuhan-Xi'an-Yinchuan PDL) and inter-city HSR lines (Wuhan-Qianjiang Inter-city Line and Wuhan-Tianmen Inter-city Line). It will also assist trains running to the south, i.e., to Changsha and Guangzhou. The New Hanyang Railway Station will be another multimodal transport hub in Wuhan, incorporating railway, urban rail transit and the road traffic (buses, taxis, coaches and private cars). According to the latest urban transit plan, there will be three metro lines connecting the new station, including Line 4, Line 11, and Line 17 (National Development and Reform Commission, 2019). Different from the previous two cases, the metro line came earlier than the (re)development of the HSR station in the New Hanyang Railway Station case. Nevertheless, the contentious site selection of the new station has influenced the final planning and development of metro networks in the station area.

The slow site selection process has disturbed the intraurban transport development plans for Caidian. As a result, the first metro line in Caidian came three year's late than the initial plan, and the anticipated driving effects of the HSR station and SFEC have not appeared yet. It would be hard to say whether the HSR station has brought positive impacts to Caidian or not. Therefore, the overall consideration at the upper scale would exert influence on the local scale, either positive or negative, depending on the specific situation. This finding aligns with Cox (1998)'s observation that *'the networks of association that some construct in order to secure respective spaces of dependence are in their turn threats to those whose spaces of dependence are at smaller scales'* (p.18).

7.5.3. Land use planning

Land use planning for the New Hanyang Station area is still in the preliminary stage. The only thing clear is that an area of 12.03 km² near Houguanhu Lake has been defined for the new station and its vicinity development. The approval of the *Wuhan Railway Hub Plan* in 2017 (China Railway Corporation & Hubei Provincial Government, 2017) and the approval of the FSR of Wuhan-Xi'an PDL project by NDRC in 2019 have endorsed the reversion of the urban master plan, urban land use plan and ecological protection plan as the new station was placed in the existing environmental preservation area. The expansion of explorable land and the

relaxation of environmental restrictions were attributable to the concerted efforts of the municipality and the CRC.

With all the land use and planning restrictions on integrated development removed, the integrated planning and development of the New Hanyang Station seems very promising. However, an agreement on the location and scale of land for comprehensive development between the CRC and the municipality has been hard to achieve. In the meantime, the role of French representatives in station area development and how their compact and TOD planning principles will be implemented remain to be seen. The final land use arrangement of the station area will be subject primarily to the scalar politics between these actors.

7.6. Summary

The New Hanyang Railway Station was planned in the post-railway reform era, after the corporatisation of MOR. Therefore, the CRC – an SOE under the direct control of the State Council became an essential player in the planning decision-making. The planning of the New Hanyang Railway Station involved players from local (Hubei Provincial Government, Wuhan municipality, Hanyang District, and Caidian District), national (CRC and other related central ministries) and international scales (the French representatives). Site selection of the station saw fierce competitions between multi-scalar actors. The intraurban transport (i.e., metro) planning was dominated by the municipality but was influenced mainly by the scalar politics in site selection, whilst land use planning for the station area is still ongoing, and a consensus between the CRC and the municipality is hard to reach. During all processes, local stakeholders – Caidian District Government and Hanyang District Government have been excluded from the decision-making. Figure 7-13 reveals the institutional/policy settings, decision-making, and planning and development outcomes of the New Hanyang Railway Station.

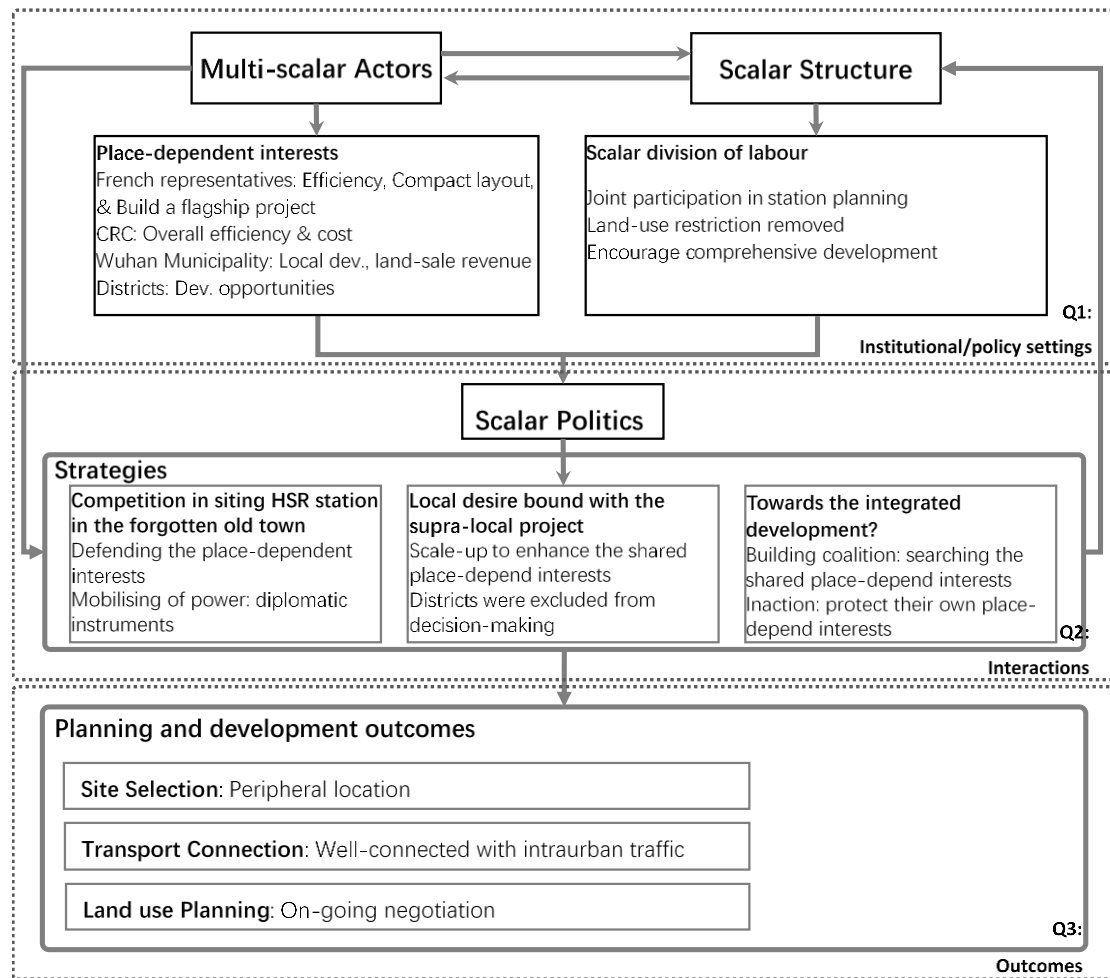


Figure 7-13. A detailed picture of the decision-making and planning outcome for the New Hanyang Railway Station

Source: Author

Multi-scalar actors have different *place-dependent interests* and thus held various expectations of the project. The municipality mainly concerned about reducing the occupation of precious construction land by the station and eliminating of segmentation effects of railway tracks. The CRC was primarily concerned with the straightness of the route and the abundance of exploitable land around the station, which might directly influence the technical parameters and performance of the HSR network. On the contrary, urban morphology, intensive land use and efficient transport linkage were the primary considerations of French representatives. Even though the French representatives were from the international scale and could impose influence on the siting plan with supralocal powers (e.g., issuing diplomatic notes), their primary concerns have been focused on the eco-city and thus the local scale.

Various scalar strategies have been used by multi-scalar actors to enlarge their *place-dependent interests*. For example, the municipality worked hard to build the shared *space of dependence* with other actors respectively to realise a conscious between all parties, although it was difficult to achieve. The French representatives mobilised the diplomatic power to secure their project-dependent interests. Local governments (including the provincial, municipal and district governments) tried to scale up the local projects to reach national or international importance in the planning processes. Strategies like these were successful in winning approvals of the project, but at the same time, have brought in the domination of supra-local actors in decision-making. The result was that the local project was planned without the local's participation.

The reshuffle of power in station area development (i.e., land use arrangement) was a result of the former rounds of scalar interactions and has led to the new game of interplay. Thus, the once *governance/institutional gaps* in integrated development have become *institutional overlaps* which triggered new scalar politics. An overall consideration of the three cases suggests that the realising/losing of interests and their reinforcing/challenging forces to the existing scalar structure were necessary processes and mechanisms of scalar structuration in rail politics.

8. Discussions

8.1. Introduction

HSR stations are *nodes* in transport networks and *places* in cities, shaping economic and physical changes at regional, inter-city, city and site levels (Bertolini, 1996, 1998, 2000). Inevitably, the broad national/regional vision and the piecemeal local views are attached to a given governance structure in any context, leading to conflicts and coordination opportunities between different scales of authorities. However, the existing literature in HSR station planning fails to fully uncover the inter-scalar interactions in the process and their effects on the planning outcome. Besides, a scale-sensitive analytical framework with the ‘balanced theorisation’ of the three elements of the ‘planning triangle’ (i.e., object, process and context) (Bertolini & Spit, 2005; Hartmann & Geertman, 2016, p. 67) is still in urgent need for a thorough study of the complex relationships between the station space, the scalar structure and inter-scalar interactions. The thesis thus aims to find this ‘missing link’ to the production of HSR station spaces – the scalar politics.

In the thesis, the changing scalar structure of HSR station planning is examined in Chapter 4, whilst the scalar interactions are investigated through three case studies in Chapter 5, Chapter 6 and Chapter 7, based on the conceptual framework presented in Chapter 3. Chapter 8 discusses the preliminary findings and arguments gained through the preceding empirical analyses, with references to the literature reviewed in Chapter 2 and HSR station planning issues raised in Chapter 1. It helps to expound why and how the ‘missing link’ is essential to the production of HSR station spaces in China. Specifically, Section 8.2 discusses the nature of the stations, multi-scalar actors in the planning of HSR stations and the scalar division of labour between them. Section 8.3 concerns the scalar relations and scalar politics in the planning decision-making of HSR stations. Section 8.4 concentrates on the planning and development outcomes of scalar interactions. Section 8.5 connects the discussions on scalar structure, scalar interactions and planning outcomes. Section 8.6 presents some remarks.

By comparing the three HSR station planning cases in Wuhan in terms of the station functions, planning processes, leading players, structural settings, scalar strategies, and various planning outcomes, Chapter 8 fully answers the three research questions of this thesis. Besides, it provides nuanced interpretations on HSR station planning issues in general and in China in particular. It discusses the functional duality of the stations and the induced multi-player

decision-making and the implications of key governance, policies, regulations and laws relating to HSR station planning and development in China.

8.2. Multi-scalar Actors and Scalar Structure

Large-scale HSR development in China comes at a time when urbanisation has been accelerating and intergovernmental relations have been transforming. Economic reforms since the 1980s have witnessed the increasing autonomy of local governments in managing essential urban resources, e.g., land, fiscal revenue, and urban development planning management (He et al., 2016; Pan et al., 2017). Local governments have been empowered during the fiscal de- and re-centralisation as they were taking more responsibilities of public policy-making and infrastructure provision, despite tightened budget constraints. It thus has increased local governments' dependency on land-sale income, which took the vast majority of their extra-budget revenues (Han, 2000; Yang & Han, 2020). The empirical evidence in Wuhan discloses that HSR stations provide opportunities for transport accessibility enhancement, urban development and land-sale income at the same time. Governments at all scales thus are keen to explore the opportunities arising from station area development. Besides, the marketisation and globalisation have brought in private and foreign players in urban development, making the planning and decision-making of HSR station planning full of uncertainties.

The empirical evidence in Wuhan confirms that the scalar structure (or, scalar division of labour) determines what resources multi-scalar actors can mobilise, which rules they can leverage (or should follow) and what responsibilities they should take. It is consistent with Cox (2010, p. 216), as he indicated that *'the state's scale division of labour ... provides a crucial context for what is possible and what is not, but also a context within which particular agents can bypass the institutions of governance altogether ...'*. Also, HSR planning decision-making in Wuhan unfolded between formal and informal decision processes.

This section discusses the multi-player decision-making nature of HSR station planning, multi-scalar actors' expectations and interests, the scalar structure in HSR station planning and what context it has provided.

8.2.1. Functional duality and multi-player decision-making

The dual attributes of the station

Both *node* and *place* functions are instantiated in the three stations in Wuhan, despite they are located at different places of the city and were planned at different times. All the stations are

critical *nodes* in the transport network. They are hubs serving multiple transport modes, e.g., trunk HSR, inter-city HSR, conventional rail, urban rail transit and the road traffic (buses, taxis, coaches and private cars). In the multi-layer transport system, each transport mode functions at a particular scale: trunk HSR connects Wuhan with other city-regions, inter-city HSR acts as an essential intraregional transport framework in the metropolitan area, whilst various intraurban transports merge the railway stations with the city. Collectively, the stations constitute a rail hub system in Wuhan: Wuhan Railway Station serves rail traffic in the north-south direction and links the neighbouring cities in the east, Hankou Railway Station is in the east-west direction and connects neighbouring cities in the north and west, whilst the New Hanyang Railway Station will accommodate the diagonal rail flows and will be the west gateway of Wuhan.

Compared with HSR stations in Europe and Japan, stations in Wuhan have relatively weak *place* functions, although the municipality holds high hopes to their urban driving-effects. It is because the stations are newly built and are in the urban periphery (Hankou Railway Station is an upgraded station and is in the urban centre), and the stations and their vicinities are planned and developed separately. However, the stations did bring land-sale and urban (re)development opportunities to Wuhan municipality. For all three stations, the municipal government has made station area plans to build new urban subcentres around the stations by using the HSR induced traffic flows (Wuhan Planning and Design Institute, 2006, 2007, 2008, 2017). The empirical analysis also indicates that the realisation of the *node* and *place* functions and the syntheses between them desire multi-scalar input and the integration of railway planning and urban planning.

Multi-scalar input

The three cases in Wuhan have confirmed that HSR station planning is a multi-player decision-making process. The involvement of multi-scalar actors derives from the multi-scalar input that is necessary for the development of stations. Both tangible (money and land) and intangible (technology and knowledge) resources are critical. Like HSR development in Europe and Japan (Pérez-Henríquez & Deakin, 2017), the rail project is initiated and financed mainly by the national government. But due to the large scale of the HSR network in China, financial investments from local governments are indispensable. The unique dual land supply system also distinguishes China from other countries in acquiring land for railway station development. Different from other countries where the railway company (in Britain and Japan) and local

governments (in France and the Netherlands) negotiate with the developers and landowners to acquire land and carry out redevelopment, municipal governments in China are *de facto* landowners for all urban land. They are responsible for both land acquisition and expropriation from rural collectives. Therefore, local governments become vital players in acquiring land not only for building new tracks and stations but also for displacement and resettlement (Wang et al., 2012).

The necessity of multi-scalar involvement also stems from the input of intangible resources, i.e., HSR technology and knowledge of the city. The MOR (and CRC) is the only railway builder and operator in China, who possesses absolute authority in railway technology. Its opinion on technical feasibility, engineering cost and operational efficiency is decisive. At the same time, local governments are the urban managers and urban plan makers, who have experience in dealing with matter associated with urban development. Since HSR stations need to meet technical requirements and accord with urban planning directions simultaneously, it is necessary for the joint input of multi-scalar actors. The establishment of MPAs (Ministry-Province Agreement) for various HSR projects has ensured the collective inputs and the bargaining mechanism between these actors. However, different from the planning in Europe and Japan, HSR station planning in China is shaped by strong government hands at all scales, and the absence of non-state sector participation is prominent. The reason lies in that fact that all essential resources are in the governments' hands and the railway authority also belongs to the government sector (even after the marketisation reform).

Integration of railway planning and urban planning

The findings in this study concur with those reported in previous studies (Bertolini & Spit, 2005), i.e., the functional duality of HSR stations also requires the integration of railway planning and urban planning in the three cases. Integration between the railway and urban planning deserves attention in China more than anywhere else because of the institutional segregation between the two systems and the emerging new power relations between government scales and functional sectors. Firstly, the independent operation of the MOR and the unintegrated '*tiao-kuai*' system of the rail sector created obstacles for the integration of railway planning and urban planning. The segregation of the railway authority (MOR and its equivalents) from MOT and MHURD at the national level eventually impact on local level operations in the implementation of HSR station area plans when coordination between HSR and internal traffic networks as well as urban development plans (Dai, 2015). The territorial

units (*kuai-kuai*) in the rail system are not incorporated into any levels of the local governments, making the horizontal integration between rail system and urban management systems impossible. The institutional adjustments of regional railway bureaus in 2005 alleviated but did not solve the problem.

Secondly, there used to be a strict separation between the railway authority and local governments in land use rights in the station area. The land use rights of railway lines and station belonged to the railway authority, whilst the land use rights of the station vicinity belonged to municipal governments. Consequently, railway station area development was divided into two parts, the station and its vicinity. The MOR was responsible for the construction of HSR stations, whilst the local government oversaw the surrounding area development, provision of intra-urban transportation and borne all the expense of land acquisition and corresponding compensation. The *division of labour* was evident in both Wuhan Railway Station and Hankou Railway Station cases, where the integrated development of the state area was hard to achieve. The New Hanyang Railway Station would see the cross-boundary cooperation between the CRC and the municipality since the policy obstacle has been removed, but the result remains to be seen.

Lastly, HSR is a new agenda for most local governments in China. Many local urban master plans have already been enacted without giving any consideration to the HSR stations (Yang & Han, 2020). It may be feasible to amend local intends to fit in with the new infrastructure, regardless of the upfront time and effort; however, in some cases, the discrepancy is irreconcilable. Both Wuhan Railway Station and the New Hanyang Station can be regarded as remedial measures for the previous rounds of urban and rail development plans since a new line burst in and the existing passways and stations did not reserve extra capacity.

Different from the HSR station planning and development in Europe where the node-based and place-based actors are mainly the railway company and developers (or local governments) respectively (Bertolini, 1998; Bertolini et al., 2012), both the two groups of players in Wuhan cases are from the government sector. The planning dilemmas induced by the functional duality of stations in China are also different from those in the West. Whilst the latter is often manifest at the operational level and in an inherent sense (Bertolini, 1998), the former derives from the institutional and policy restrictions. Both the railway authority and local governments greased the wheels to integrate railway planning and urban planning, e.g., the establishment of *Rail Office* and *Rail-Supportive Offices*, the connection of the stations with various intraurban

transport by the municipality, the respect and obedience to local urban development plans by the railway authority, etc. However, the long-been history of ‘*tiao-kuai*’ segmentation made it hard to reconcile the two systems. “*The outdated institutions, or the lack thereof, along with the lack of appropriate incentives, handicapped the implementation of integrated station area planning and development*” (Yang & Han, 2020, p. 8).

8.2.2. Multi-scalar expectations and place-dependent interests

Based on the proved multi-faceted impacts of HSR (e.g., transportation accessibility improvement, economic development, land use and environment changes) in the literature (Garmendia et al., 2012; Loukaitou-Sideris et al., 2012; Monzón et al., 2013; Ortega et al., 2014) and the successful HSR station development stories in other cities, multi-scalar actors have different expectations on HSR station projects. The empirical evidence from Wuhan identifies that external transport accessibility improvement, urban development and the induced land-sale opportunities are the most desired impacts of HSR stations, which can also be classified into node-based and place-based effects. Multilevel governments are also aware of the negative effects brought by HSRs, e.g., segregation of urban places by railway lines and stations, environmental influence on the urban ecology and the disturbing effects on prime urban land. To realise the positive anticipations and reduce/avoid negative consequences, inputs (tangible and intangible) from authorities at all scales are necessary. All these impacts and inputs are materialised and positioned at different scales, which are convinced as ‘place-dependent interests’ (Cox, 1998, p. 5; 2010, p. 224) of multi-scalar actors.

The thesis argues that *place-dependent interests* are not watertight, that is, they could be infringed or taken away by actors from other scales, especially when there are *institutional overlaps* (Peters & Pierre, 2001), e.g., the joint participation in station site selection. The realisation/maximisation of the interests at one scale may undermine the interests at other scales. Also, the realisation/maximisation of the interests in one aspect (e.g., transport accessibility) may damage the interests in others (e.g., environmental protection). Multilevel governments must give an overall consideration of the various interests and make choices when they are conflictive. There are also opportunities for them to enlarge the common interests of all scales, e.g., integrated development of the station area. But, a clear division of input and interests is the prerequisite. When actors contest with each other, they weigh the scale of input and the scale of reward as the two do not always match with each other. The mismatch between them often results in conflicts, thus generates demand for negotiations.

In the three cases, governments at all scales regarded the station as a landmark project – the gateway of Wuhan and a flagship station of the HSR network. However, they had different expectations towards the station based on the potential *place-dependent interests*. For district governments, the station meant different things depending on their geographic locations and the level of economic development. Well-developed inner-city districts (e.g., Hongshan, Wuchang and the Optics Valley) held the *Not-In-My-Backyard* view, as the station would take up their precious explorable land and the railway lines would split the urban fabric. Underdeveloped outer-city districts (e.g., Qingshan and Caidian) viewed the station as a rare opportunity to enhance local development. Nevertheless, all districts would welcome a station if the railway lines had to go through their jurisdiction (e.g., the Optics Valley in the Wuhan Station case). Enhanced external accessibility, cost of construction and land-sale income were all beyond their *place-dependent interests* and were thus out of their considerations.

The municipal government counted on station induced urban development opportunities and the potential land-sale income but rebelled at high-cost land acquisition and any adverse effects to their incubated urban (re)development projects. It considered both opportunities and threats of the HSR projects and chose the optimal location from the whole city prospect. For example, the municipality used the station to realise its urban expansion plan in both Wuhan Station and the New Hanyang Station cases. The municipality was also keen to build grand stations, which could be counted as the achievements in the local cadre's official career. So, it spared no effort to enlarge the station scale, beautify the station appearance, and introduce various intraurban transports into the stations. That was also why it proposed to build an air-rail integrated station in the New Hanyang Station case. In terms of station vicinity planning and development, the municipality did not expect for integrated development because it would damage their vested land-sale income. In general, the overall efficiency of the HSR network, the travel experience to passengers and the use of ecological land (land near the East Lake and land in Houguanhu area) were just out of its *place-dependent interests* or were not their core interests.

Hubei Provincial Government cared about the overall development of the province and the '1+8' city circle (or, Wuhan Metropolitan Area). So, it actively strived for new HSR lines and stations in Hubei. The PDLs and the *Wuhan Intercity HSR Network* would enhance both interregional and intraregional accessibility of Hubei. Besides, stations on the railway lines would trigger urban (re)development opportunities for cities in Hubei. The provincial government also acted as the coordinator between the central ministries and the municipality in the station site selection and station area planning in Wuhan when necessary.

The Central Government's expectations were relatively comprehensive. For HSR projects, it mainly expected for the enhanced accessibility and urban development opportunities but was also concerned about the construction costs and the induced environmental impacts (Ministry of Railways, 2004; National Development and Reform Commission, 2008, 2016a). It preferred inner-city locations of the station and expected convenient urban transport connection with the station. At the same time, it also considered the local development needs. Consequently, it agreed to change the Shahu Scheme to Yangchunhu Scheme in the Wuhan Station case and recognised the necessity to remain the station adjacent to the eco-city in the New Hanyang Station case. In terms of integrated development of the station area, the MOR gave up the rail-urban cooperation attempt in the Wuhan Station and Hankou Station cases, as it cared more for fast construction of the station. In the New Hanyang Station case, the CRC expected not only the overall HSR efficiency but also more explorable land around the station as the land use restrictions were removed. Overall, the Central Government viewed HSR station planning in a broader context and weighed the advantages and disadvantages by discretion.

Although the French representatives were international players, their territorially defined interests were at the eco-city scale. As a result, their siting and station area planning proposals were project-oriented. That said, they are different from the ordinary market player as they were endorsed by both the Chinese and French governments. As for the developer – Tianfeng in the Hankou Station case, it did expect increasing passenger flows from the upgraded station. Still, the municipality's transport complex proposal would disturb its initial development plan. Consequently, it bargained for relaxed planning constraints to obtain compensation to its *place-dependent interest*.

8.2.3. Resources, responsibilities and rules

The empirical analysis indicates that scalar structure of HSR station planning is embodied in its territorial/administrative incarnations: the distribution of resources and responsibilities between the state and various forms of local governments – province, municipality and district, and the rules that guide their actions. Multi-scalar actors are empowered by resources in hands and the rules in decision-making (Giddens, 1984). The scalar division of responsibilities further determined their roles in HSR station planning. The point is that multi-scalar actors take multiple duties at the same time, whilst those resources are necessary for other urban agendas, and myriad rules can impact each other.

Scalar division of resources

Unlike Pol (2008) who treated proceedings (decision-making or participation) as a *resource* for HSR station planning, the thesis views it as one aspect of the rules. Furthermore, the key resources of HSR station planning identified in the empirical study included monetary resources, land, knowledge, and technology. The distinction made between knowledge (of local urban development) and technology (of HSR development and operation) aims to highlight the different *resources* in urban planning and rail planning.

The resources were controlled by different authorities positioned at various scales. Financial input from the Central Government (represented by the MOR or CRC) made up the majority (at least 51%) of HSR construction funds (Amos et al., 2010). Provinces and municipalities along the line also invested in the project, and their shares ranged from 20% to 49%. Other funds came from private investors. The railway authority was thus the major shareholder, who also held the right to dispose of the railway construction fund. As for critical stations, e.g., Wuhan Railway Station and Hankou Railway Station, the Central Government also allocated special funds for the construction and upgrading projects. Land, as a vital local resource, was provided by municipal governments. The cost of land acquisition and resettlement in Wuhan was counted as their share of investment for the whole HSR project. Both money and land were significant resources for local governments as they were critical for all urban development projects. Local governments thus must make choices on how much and which resources would be used for railway stations. Wuhan municipality tended to use outer-city places as station sites (e.g., Wuhan Station and New Hanyang Station) but was keen to invest large scale of land and money to build grand stations.

Railway technology and knowledge of local conditions were two critical intangible resources for HSR station planning. The MOR (and CRC) held absolute technical advantages on site selection, whilst Wuhan municipality had better knowledge about site circumstances and held a comprehensive outlook for urban development. The intention for the input of both resources was to ensure that the station fit the needs of urban development and meet railway technological requirements simultaneously. The acting of both resources could be used as strategies to achieve their respective goals. In some circumstances, the resources came from the private sector. In the Hankou Station case, Tianfeng owned the land use right of the only undeveloped land in the station square. Therefore, the municipality's plan to build a transport complex required the developer's input. In the New Hanyang Station case, the French representatives were the initiator and investor of the eco-city project, and their urban planning expertise was

indispensable for the site selection of the station. However, they did not provide direct investment (land or money) to the HSR station.

Scalar division of responsibilities

Actors from multiple scales had different responsibilities which were defined by their statutory mandates. The Central Government's task was relatively comprehensive, and HSR development was just one aspect. Correspondingly, local governments also took multiple tasks simultaneously. They weighted the advantages, disadvantages and priority of each task, although the primary mission was the better development of their jurisdictions.

In HSR station site selection, the MOR (CRC) oversaw the technical feasibility and construction cost and cared for the overall efficiency of the HSR network. Each of the other central ministries considered the policies and regulations for the sector in charge. For example, the MLR approved land uses for rail projects, whilst the MHURD granted planning permissions for these projects, and the MEP examined the environmental impacts. Hubei Provincial Government was responsible for coordinating the interests between the central and local and balancing interests between municipal governments. Wuhan municipal governments' responsibility was to specify local development orientations and reconcile the railway plan with local urban projects. Although the 2013 rail reform has transformed the MOR into an SOE, the responsibilities of the railway authority in the siting process remained the same.

After the site selection, Wuhan Municipal Government appointed local district governments to carry out land acquisition and resettlement, despite bearing the cost by itself. The land for rail lines and stations were allocated to the railway authority, whilst all the surrounding land belonged to the municipal government. The railway authority oversaw the station design and construction. Central special funds were used to finance the (re)construction of critical stations. The municipality planned the station area and organised the land-sale to developers, the income of which made up its extra-budget revenue and was used for providing municipal facilities and infrastructures. In terms of intraurban transport provision, Wuhan municipality took the full charge and covered the total cost.

Before the rail land policy adjustments, there was a governance gap (governance vacuum) at comprehensive development of rail land (Pierre, 1999), and neither the municipality nor the MOR was thus willing to go across the line in both the Wuhan Station and Hankou Station cases. The rail land use policy has changed since 2013, and both the CRC and local governments are encouraged to conduct integrated station area development. However, the new

division of labour was not clear, and further observation is needed to determine the inter-scalar interaction effects.

Not only responsibilities in the HSR station planning affected their actions, but also the duties in other related fields had an impact. The Central Government must ensure the HSR plan is in line with other national policies and regulations. The local governments, including the provincial, municipal and district-level governments, were responsible for local social-economic development of their jurisdictions. The municipal government was also responsible for financing a wide range of public services and urban infrastructure. The traditional Chinese central-local relations indicates that local governments are taking more responsibility of infrastructure provision and urban development but with tightened local budget constraints (Cao et al., 2008; Li, 2010; Lin & Zhang, 2015). Therefore, the scalar division of labour in HSR development was also subject to the scalar structure in other aspects.

Rules

The thesis discovers that an abundance of rules (e.g., policies, regulations, procedure guidelines and sectoral standards) guided the actions of actors at different scales in HSR station planning. Those rules defined who would be included in the planning decision-making, what roles they should play and what procedures should they obey. The rules were not restricted in the rail sector but included plan-making practices in other functional sectors. The most relevant ones concentrated on the urban master plan, land use, urban rail transit and environmental protection plan makings. Plan-making for various sectors were chronologically staggered, as they were carried out based on different planning sequences. Inevitably, there was inconsistency among different programs which called for constant amending and revising.

Railway development plans in China were made on two levels: strategic long (or mid) term plans and the short-term project plans. The central ministries and the MOR, in particular, dominated the mid and long-term plan-making. These strategic plans decided which cities and regions will be connected with the HSR network (Lawrence et al., 2019). Although subnational actors were officially excluded from the decision-making, the New Hanyang Station case saw two provincial governments (Hubei and Shaan'xi) promoting their proposals and appealing the central ministries to build an HSR connecting both provinces. In terms of project planning, both municipalities and provincial governments were entitled in the decision-making, where site selection for railway stations was discussed. HSR station plans should be consistent with local urban development plans, including master plan, land use plan, urban rail transit

development plan and environmental protection plan. If there were inconsistencies, either the urban development plans or the siting plans should be amended.

Different from the top-down planning procedure of railway development plans, plan-making and revising of various urban development plans took a bottom-up approach. The municipal government prepared all the plans based on local conditions and previous programs. Since Wuhan is a vice-provincial city, its urban development plans were examined by different central ministries, depending on the functional sector of the plan. They were finally endorsed by the State Council. Among them, the urban rail transit plan was an exception, as the decentralisation reforms in 2013 and 2015 has delegated the approval powers to lower levels (e.g., the rail transit renewal plans no longer need the examination of the State Council, whilst the provincial government would approve the FSRs and adjustments to single lines). The sub-provincial administrative status of Wuhan ensured its high autonomy in urban rail transit development. For other urban development plans, the requirement for central examination and approval not only increased the difficulty for plan amendment but also prolonged the process.

These plan-making and revising rules would support or limit multi-scalar actors' demand in a given context. In the Wuhan Station case, the plan revision rule was used by the MOR to play down the municipality's new station site proposal. However, once the MOR approved the station siting plan, it became an essential central ministerial endorsement for the municipality to revise its urban master plan and land use plan. Similarly, in the New Hanyang Station case, the municipality tried to use the plan revision rules to locate the new station in the urban green wedge which would facilitate its needs to amend the urban master plan and environmental protection plan.

One remarkable feature of the 'planning rules' in China was the absence of non-state sector participation, including that from the general public. It is divergent from the HSR station planning cases in Europe and Japan where the railway authorities and governments have to negotiate with developers, landowners and various non-state organisations (Molotch & Vicari, 1988; Peter, 2009). Bureaucratic considerations dominated the previous rounds of railway reform and adjustments of *scalar division of labour* between multi-scalar authorities, without breaking up the state monopoly (although the MOR's monopoly was weakened) (Yin-Nor, 2016). The roles of the non-state sector and the public in railway plan-making and agenda setting were limited.

The discussion on the scalar division of labour suggests that under a specific scalar structure, resources and responsibilities are divided among multilevel actors and rules are laid down to guide their actions, all of which have empowered each player in the decision-making. The *scalar division of labour* may be uneven so that scalar tensions and interactions are triggered. The *division of labour* is never rigid and fixed as actors keep on mobilising resources and power to enlarge their interests (Park, 2008). The scalar structure thus is no longer understood as a pre-given, fixed structure but is a constitutive dimension of political-economic processes, which is continuous contested and malleable (Brenner, 2001; Jessop, 2002).

8.2.4. Formal and informal institutions

The thesis argues that both formal and informal institutions incarnated the scalar structure of HSR station planning. The unique institutional settings and the indigenous governance concepts in China remain crucial when investigating inter-scalar interactions (Hensengerth, 2015). Compared with the existing literature, the empirical study in the thesis has noticed that the Chinese institutional settings articulated the platforms and channels for multi-scalar interactions, whilst the indigenous governance concepts facilitated the understanding of their relations.

Formal institutions

The traditional ‘*tiao-kuai*’ system remained in force in intergovernmental relations and simultaneously restricted/supported the interactions. The ‘*tiao-tiao*’ system ensured that local functions over various sectors were consistent with the superior authorities reaching down from the central ministries. The ‘*kuai-kuai*’ system guaranteed that each organ of the territorial government at the provincial, municipal or district level acted on the needs of the locality that is governed. Territorial governments are superior organisations to their functional departments in a leadership relation (*lingdao guanxi*), whilst superordinate and subordinate organisations within the same functional sector had a more circumscribed association than leadership, which is called professional guidance (*yewu zhidao*). Thus, local departments (e.g., land management bureaus and planning bureaus) had reporting responsibilities to both the central ministries and the mayor of the city where they located. In any case, the administrative rank was critical; that is, the lower the executive authorities should obey higher administrative commands (Hensengerth, 2015; Lieberthal & Oksenberg, 1988). The ‘*tiao-kuai*’ system ensured that local development plans would meet central policy requirements while maximising local interests.

Nevertheless, the territorial units (*kuai-kuai*) of the railway sector were not incorporated into any levels of the local administrations. The unintegrated '*kuai-kuai*' systems between the administrative line and the railway line created two consequences. On the one hand, the local needs in terms of railway development could not be reported to the MOR (CRC) through direct formal channels. Consequently, informal channels were necessary to make up the 'circuit breaker' in the scalar structure. On the other hand, the parallel of the railway bureaus and the municipalities induced much complexity and uncertainty in railway station planning as the governance was highly fragmented. Again, the empirical findings proved that the scalar structure was never rigid and fixed as actors kept on mobilising resources and power to enlarge their interests (MacKinnon, 2011; Park, 2008). The establishment of the MPAs bridged the local governments and the railway authority so that negotiations could be done within the joint venture framework, thus different from both *yewu guanxi* and *lingdao guanxi* in the '*tiao-kuai*' system. The institutional reform of regional railway bureaus in 2005 was another structural rearticulation to align the local development needs with the railway sector plans.

These institutions provided the platforms and channels for formal inter-scalar interactions. All the reporting-approving, commanding-executing and negotiating actions were carried out within the institutions. In China, each state actor was designated with a particular administrative rank, which was critical in formal bureaucracies. Only institutions with the same levels of administrative status could have equal negotiating positions. It was why HSR planning was organised under the MPAs between the MOR and the (ministerial-level) provincial government and normal municipal (prefecture-level) governments relied on their provincial governments to bargain with the railway authority, but Wuhan (a sub-ministerial level municipality in China's administrative hierarchy) could take one negotiating seat in the decision-making. Even the SOEs have corresponding ranks, e.g., the CRC is a ministerial-level enterprise.

Informal institutions

Formal institutions were not the only arena for inter-scalar interactions. HSR planning unfolded between both formal and informal decision processes (Yang & Han, 2020). The cases in Wuhan witnessed the informal channels for communication between levels of authorities. Usually, informal institutions were built on personal connections or *guanxi*. Like the *alumnus* which could play vital roles in cross-scale power-mobilising in the West (Cox, 2010), key decision-makers at different scales in China were also connected by various personal connections (Yang

& Han, 2020). Based on the *guanxi* with then Hubei-born MOR minister, Hubei province enlarged its HSR network, and Wuhan successfully abandoned the site for Wuhan Station in its urban master plan. More interestingly, the informal connection between the minister and the province was finally materialised into formal institutions, i.e., the *Rail Office* and *Rail-Supportive Offices*. These formalised institutions have enhanced the cooperation between the rail system and the local governments and boosted railway development in Hubei (Wang, 2019). Even without concrete *guanxi*, local governments would spare no effort to build their channels to communicate with the central government ministries – *paobu jinjing* was the common practice for them. The various provincial and municipal resident offices in Beijing (*zhujingban*) were the institutions facilitating the (formal and informal) visits and communications of their local officials to the central ministries. Besides, calling on the telephone, discussing matters over a meal and informal meetings are other common informal channels for the communication between scales. During these everyday communications, local development plans were promoted, and favourable considerations and support from the central officials were requested. Of course, these informal institutions might lead to corruption, which could tell from the scandals in the rail system (Tjia, 2019; Yin-Nor, 2016; Yu, 2015).

The empirical evidence proves that both formal and informal institutions can be used by multi-scalar actors to mobilise power and build coalitions to pursue their *place-dependent interests*. The scalar structure provides a crucial context for multi-scalar interaction, but itself is not fixed or stable (Park, 2008). It could be temporarily sedimented but will perpetually interact with the emergent social activities.

8.3. Scalar Politics

The literature on scalar politics mainly focuses on interactions caused by inter-scalar tensions (Cox, 1998; Park, 2008; Swyngedouw, 1997), even though the concordant relation between scales is acknowledged (Shin et al., 2015). It is easy to understand that inter-scalar tensions can induce inter-scalar interactions (Park, 2007), but it is still unclear what can inter-scalar concordance lead to. Research on HSR planning concentrates on the conflictive siting (for both lines and stations) process (Xu, 2017; Xu & Yeh, 2013; Zhang et al., 2020). As a result, the collaborative opportunities between multi-scalar actors in the processes of station design, station vicinity planning and the intraurban transport planning were ignored. The three case studies in Wuhan suggest that both inter-scalar tensions and concordances existed in HSR station planning, and significantly, both relations have triggered inter-scalar interactions.

Multi-scalar actors formulated various *scalar strategies* to enlarge their *place-dependent interests* in the planning and development of HSR stations, amidst both tensions and concordances.

8.3.1. *Conflicting and concordant scalar relations*

The empirical analysis suggests that inter-scalar tensions and inter-scalar concordances co-existed in HSR station planning in Wuhan. The intensified competition in site selection for Wuhan Railway Station and the New Hanyang Railway Station saw inter-scalar tensions, whilst the importing of HSR into Hankou Railway Station, the planning of the station and its vicinity, and the planning of intraurban transport in all three cases confirmed the existence of a relatively concordant inter-scalar relationship. The thesis argues that the inter-scalar relations, either scalar tensions or concordances, were derived from multi-scalar expectations and the scalar structure, which manifested as conflictive or concerted *place-dependent interests*.

In the site selection processes, inter-scalar tensions were easily raised. The reason was that the station was believed to have both positive and negative impacts on actors at different scales due to its dual attributes (*node* and *place*). The realisation/maximisation of the positive implications at one scale would jeopardise the interests or enlarge the negative impacts at other scales (see 8.2 for a detailed discussion). The location of the station was of great importance in HSR station planning, which would likely impact a series of other planning issues, e.g., the land use arrangement, transport networking and industry layout in the station area. The three cases have confirmed the unique role that station locations play in the planning and development of HSR stations (Hall, 2009). The case studies have also revealed that the scalar structure had contributed to the formation of these inter-scalar tensions (Park, 2003). The scalar division of labour (resources, responsibilities and rules) has not only defined the place-dependent interests of multi-scalar actors but also equipped actors at different scales with necessary resources, power and channels to the pursue of their divergent expectations. Take the site selection of Wuhan Station as an example, the place-dependent interest of Wuhan municipality was at the city scale, whilst the place-dependent interest of the MOR was at the whole HSR network scale. Both scales held essential resources (land and knowledge of local urban development for the municipality versus money and HSR technology for the MOR). They were the statutory players in the decision-making. Therefore, there were *institutional overlaps* (Peters & Pierre, 2001) between the scales. Their divergent expectations towards siting for the new station thus led to scalar tensions.

In the station area planning and development processes, the inter-scalar concordance prevailed. Governments at all scales wished to build *a magnificent modern station*, which would act as a vital transport node in the HSR network and would be a dynamic place in the city. There were opportunities for multi-scalar actors to make it big, i.e., enhancing the intraurban transport accessibility and integrating the station development with urban development. Both attempts would enlarge their respective place-dependent interests, either node-based or place-based (Bertolini, 1998). However, there was the rigid division of responsibilities and interests in station area development and intraurban transport provision: the municipality was in charge of the station vicinity and intraurban transport, whilst the MOR oversaw the design and development of the station. In other words, the intraurban transport provision responsibility was fully assigned to the municipality, whilst the development of the station and its vicinity were given into two hands, and a *governance gap* (Pierre, 1999) on integrated development thus emerged. The violation cost for either side to break the land use boundary to conduct integrated development was high. The explicit statutory obligations of the local and central government in station area development thus led to concordant scalar relations.

It is also notable that an absolute concordance relationship between multi-scalar actors was impossible. The adjustment of the *scalar division of labour* (new spatial projects) (Park, 2008) would break the balance and bring in potential scalar conflicts. For example, the rail land reforms started in 2013 has removed the restrictions on the integrated and comprehensive development of the station and its vicinity. The scalar structure rearticulation filled the *governance gap* in station area integrated development but would result in conflictive scalar relations in station area planning and rail land allocation, e.g., the New Hanyang Station case.

The findings of the inter-scalar concordance reify the long-held speculative scalar relation in the scalar politics literature (Park, 2008; Shin et al., 2015). Now it is more enticing to exposit what kind of inter-scalar interactions will it bring. The next section discusses the various inter-scalar interactions induced by the two inter-scalar relations in HSR station planning decision-makings and the scalar strategies that applied.

8.3.2. Building coalitions and mobilising power: Competition strategies in conflicting scalar relations

In the thesis, building coalitions and mobilising powers in other scales are proved as the major scalar strategies to tackle inter-scalar tensions in HSR station planning (Cox, 1998, 2010; Park,

2005; Shin et al., 2015). The former aimed at specifying the *space of dependence*, whilst the latter sought to leverage the *space of engagement* (Cox, 1998).

The station siting processes in the three cases suggest that the building of coalitions could be achieved either by the *territorial power* (Cox, 1998, p. 7) or by discovering the common interests. In China, district-level governments do not have autonomy in fiscal expenditure, land use planning and urban development. Hence, their superordinate government – the municipality – holds the *territorial power* to organise major infrastructure development. As a result, the opinions of districts on station siting were easily unified by the municipal government. Wuhan municipality chose the Yangchunhu Scheme based on an overall consideration of the whole city, and in no small extent, its opinion was consistent with the districts. The valuable locations in well-developed districts (e.g., Hongshan and the Optics Valley in the Wuhan Station case) were retained. In contrast, the backward areas (Yangchunhu in the Wuhan Station case and Caidian in the New Hanyang Station case) were selected for the station sites, aiming at the catalysis effect of the station. For inter-scalar tensions that extended beyond the territorial powers, a coalition could only be built with the discovering of common interests. In the New Hanyang Station case, the municipality convinced both the CRC and the French representatives with the Kuaihuoling Scheme by emphasising the benefits of the new proposal from their respective aspects, i.e., the enlarged station area development opportunities for the CRC and the accelerated development process of the SFEC for the French. However, common interests were not something that can be found just around the corner. For example, in the initial stage of site selection for the New Hanyang Station, Wuhan municipality proposed a rail-air integrated station plan to entice the CRC. In the meantime, it wooed the French representatives to make a compact layout and follow the TOD principles in the station area if they agree to downgrade the New Hanyang Station into an inter-city terminal. Unexpectedly, both parties rejected the proposal. In the Wuhan Station case, the municipality and the MOR also failed to find common ground.

When the shared *space of dependence* is challenging to build between multi-scalar actors, they will turn to the *space of engagement* to mobilise the power that can suppress their opponents. The empirical evidence in Wuhan suggested that both formal and informal networks would be leveraged. In the Wuhan Station case, the stalemate situation in site selection was changed when the local government managed to use the special *guanxi* with the Hubei-born minister to mobilise the power in the central. A final agreement was thus quickly reached between the two scales. Mobilising power may not always lead to an inter-scalar deal but can at least protect the

place-dependent interests for the one seeking help. In the New Hanyang Station case, the French representatives worried that the municipal government would relocate the new HSR line to Tianhe Airport and downgrade the New Hanyang Station into an inter-city terminal, which would broadly undermine the accessibility of the planned eco-city. By threatening to mobilise the France government to issue a diplomatic note to the Chinese Central Government, they succeeded in retaining the HSR station within the eco-city.

The research also finds that mobilisation of power is not necessarily an upward campaign but can be done in the reverse direction (Cox, 1998, 2010). In the Hankou Station case, the municipality helped the railway authority to rent a local shopping mall which was used for the ticket lobby and waiting rooms when the station was under reconstruction. The higher-level MOR thus relied on the local *space of dependence* of the municipality to bargain with the private plaza. In the Wuhan Station case, the municipal government used petition letters from the local community to resist the MOR's proposal. The *space of engagement* with a smaller/lower scale was strong enough to withstand the central ministry's plan as no government would be openly unsympathetic to public opinions.

8.3.3. Cooperation and inaction: Strategies in concordant scalar relations

The politics of scales literature has not clarified whether a concordance relation between multiple scales can lead to inter-scalar interactions (cooperation or coordination) or inactions (Park, 2008; Smith, 1995). Scholars tend to take it for granted that no tensions between scales demonstrate the fastness of the existing scalar relation, which will further intensify the scalar structure (Shin et al., 2015). The seemingly self-evident argument has covered up the scalar politic under inter-scalar concordances. The three cases in Wuhan show that the concordant relation would not only induce cooperation opportunities but also leads to limited cooperation or even inactions between multi-scalar actors.

Under the inter-scalar concordance, multi-scalar actors hold concordant expectations, e.g., enhancing both the *node* and *place* functions of the station and its vicinity. Their expectations can be realised with or without taking risks. They tend to cooperate when the vested *place-dependent interests* are not damaged, and no other hazards are raised, whilst they will not act when there is a risk of loss. In the Hankou Station case, multilevel governments shared the same goal to build Wuhan into a rail hub city. So, they cooperated to upgrade the old stations and designated different architectural styles for all the three passenger railway stations. Under this multi-scalar concordance, one could comprehend why they invested so much to rebuild the

external façade of the station and surrounding buildings and removed the overpass in front of the station just to make things look good. Their partnership would help to build a new landmark project and would not threaten their respective interests. Other similar examples included the building of tunnels underneath the railway, incorporating of metro lines to the railway stations and the introducing of inter-city HSRs into the station.

The concordant inter-scalar relation will not result in cooperation when there are risks of going across the line between the scales. In both Wuhan Station and Hankou Station cases, the planning and development of the stations and their vicinities were on double-tracks. Neither the municipality nor the MOR crossed the border of land use rights to undertake comprehensive development or to integrate the stations with their vicinities. The uncoordinated processes helped the two government tiers to be in control of their respective spaces (the station and its vicinity). Still, the *place* function of the stations has not been fully achieved. Even after the removal of the land use restrictions in the New Hanyang Station case, the cooperation between the two authorities on integrated development has not been guaranteed. The same was right in the planning of a transport complex in the vicinity of Hankou Station. The high policy risks to break the scalar boundary to work with the private developer finally put off the municipality's endeavour in enhancing the *node-place* integration of the station area.

8.3.4. Scale-up and scale-down: Unilateral scalar manipulations

Apart from the above scalar strategies that used to forge a solution to inter-scalar tensions or to achieve cooperation under inter-scalar concordance, the thesis has also uncovered some unilateral scalar manipulations. The actors formulated strategies either to scale-up or scale-down their projects to enhance their interests. On the one hand, Wuhan Municipal Government tried to bind local projects with the national or international projects to enhance the legitimacy and stringency of their initiatives. For example, the municipality managed to incorporate the eight urban villages resettlement in the green wedge (in New Hanyang Station case) and the expansion of its metro network (in all three cases) into the HSR development plans. By doing so, its longing needs for statutory plans amendments were bound with the national key projects, which would be more likely to be approved by the central and provincial authorities. The municipality also combined Yangchunhu Subcentre (in Wuhan Station case), the urban village renovation projects (in Hankou Station case) and the development of Caidian (in the New Hanyang Station case) with HSR station projects to attract developers and investors, which would likely boost local land-sale and economic development opportunities.

Nevertheless, the scaling-up may have adverse effects. The delayed arrival of metro lines in Caidian resulted from the *Tug of War* on the site selection of the New Hanyang Station was one example of such effect. It aligns with Cox (1998)'s observation that '*the networks of association that some construct in order to secure respective spaces of dependence are in their turn threats to those whose spaces of dependence are at smaller scales*' (p.18).

On the other hand, the municipality, in some cases, scaled-down its projects to exclude the interference from different scales. For example, although Wuhan Municipal Government promoted the urban renewal and development plans to the private sector by highlighting their connections with the national HSR project, it strictly defined and operated them as municipal projects to eliminate interference from the railway authority. In the New Hanyang Station case, the municipality relocated the station site out of the defined eco-city area to scale down the eco-city project and the HSR project at the same time. As a result, Wuhan municipality could accelerate the eco-city project without the rail project's distraction, whilst it could plan the station area without the French expertise's interference. It was in stark contrast to the project proposal stage when it tried to scale-up the projects by combining all possible plans together, e.g., HSR station, eco-city, urban metro, sub-centre development.

What needs to be pointed out is that there might be overlaps between different scalar strategies, or in other words, the boundaries between them are not clearly/strictly defined. It is understandable as all of them are socially constructed, and the social process is highly kaleidoscopic and multi-faceted. The empirical findings in the three cases help to highlight the common practices and interactions in the multi-scalar decision making.

8.4. Planning and Development Outcomes

The planning and development outcomes of the station are materialised in the station space, i.e., location, land use and transport connections, which determines the *node* and *place* functions of the station. It will finally determine to what extent the *place-dependent interests* at different scales are realised. The realisation/loss of their anticipated interests will act as reinforcing/transforming forces to the existing scalar structure (Park, 2008). The interplay between scalar structures and inter-scalar interactions is thus not unidirectional. In other words, the scalar structure can facilitate/constrain inter-scalar interactions and can also be transformed by inter-scalar interactions (Brenner, 2001).

8.4.1. Location, land use and transport connections

Wuhan Railway Station was located in the urban periphery, with an expectation of triggering local development opportunities and saving HSR construction cost and time. The station was built on a fast pace and much housing demolition, and resident relocation cost was saved because it was positioned in an underdeveloped area. On the contrary, the local-pursued catalysing effect of the station has not been achieved yet. It was mainly due to separate development processes of the station and its vicinity as well as the split of land use rights in the station area. In terms of the intraurban transport connection, Wuhan Railway Station has been linked with various transports, e.g., metro, express highways, buses and taxis.

As the only inner-city HSR station, Hankou Railway Station has the potential to induce urban redevelopments and to become an integrated transport hub. The development outcome turned out that the only integration came as the upgrading of the external façade of the station building and its surrounding buildings. The urban village renovation projects were run separately with the upgrading of the station. But again, the transport connection has attracted a lot of efforts, and a multimodal transport hub was physically realised.

The New Hanyang Railway Station is the only station that has been planned after the railway reform. However, it was again placed in the urban periphery, although the primary concerns were around technical feasibility and efficiency. As segregation of the property rights and restrictions on land use between the railway authority and the municipality have been removed, the integrated development of the station area is worthy of expectation. However, integrated development may undermine the vested interests of the municipality and thus may lead to future scalar politics. On the contrary, metro lines are planned to link the new station with the city centre and the core areas of both Caidian and the eco-city.

In general, multi-scalar actors paid more attention to the realisation of the *node* functions of the station, and the *place* function has been neglected to a large extent. All the stations are or will be developed into multimodal transport hubs, but they (Wuhan and Hankou stations) are separated mainly from their vicinities. The *place* function of the station was embodied primarily on the induce land sale opportunities. Integration of the *node* and *place* functions of the stations was thus hard to achieve. It was due to the planning tradition in China where projects are targeted with a long-term perspective to ‘fit’ the rapid urbanisation process of the country.

Apart from the station space, the inter-scalar interactions also resulted in the establishment of new institutions or the reinforcement of existing institutional setup. The MPA was frequently used in HSR development in China, which acted as an effective regime to coordinate multi-scalar interests (Wang et al., 2012; Xu & Yeh, 2013). Both formal (MPA) and informal institutions (*guanxi* and *paobu jinjing*) were mobilised in the Wuhan Railway Station case to build the *space of engagement* between the central and local governments. What distinguishes Wuhan (as well as Hubei) from other places is that the *guanxi* and *paobu jinjing* based informal institutions were institutionalised into formal organs, that is, the Leading Group and the Rail-Supportive Offices (*zhitieban*).¹²

8.4.2. Realising or losing the interests

The station space (i.e., location, land use and transport connections) finally determined to what extent the *place-dependent interests* at different scales were realised. Each planning outcome was the result of interest balancing between multi-scalar actors at the time of planning. But the temporary concordant relations at the decision-making was not a stable equilibrium as the realisation of the *place-dependent interests* was subject to the evolution of the station space during daily social-economic activities. In other words, decisions were made ahead of the construction of the station and development of the station area. Thus, the actual development may or may not be the same as they had anticipated.

If the station space was developed into what it had been planned to be, then the multi-scalar expectations were realised and the existing scalar structure would likely to be reinforced. However, if the station space was developed beyond the initial plans and the multi-scalar expectations did not come real, new rounds of inter-scalar politics would likely to be triggered, which may eventually lead to scalar rearticulation. For example, the unintegrated land use development in both Wuhan Railway Station and Hankou Railway Station was a result of concordant scalar relations. In the short-term, the inaction of the two parties would safeguard their respective interests, although it would eventually lead to the loss of chances for land value capture. It was not a problem in the railway leapfrog development era when the money was plentiful but would turn into a loss of interests when the central government became deficit

¹² The status of Hubei as the birthplace of the former MOR Minister Liu makes Hubei and Wuhan unique. Several interviewees claimed that *guanxi* and *paobu jinjing* practices based on this special personal tie have not only provided the informal communication channel for Wuhan, but also facilitated the inter-scalar institution building, i.e., the establishment of the Leading Group and the Rail-Supportive Offices. In fact, Hubei is one of a few provinces, if not the only province, that has established the Leading Group and the Rail-Supportive Offices in all its prefecture-level cities (Informant 2, 17, 34, personal interviews, 2017 & 2018).

financially in railway development. It was precisely the problems raised in the railway leapfrog development era (see Chapter 4).

One remarkable feature of the HSR station development decision-making in China is the absence of non-state sector participation, including that from the general public. The interests of the general public, especially the passengers, were realised or undermined when the station was put into use. For example, the peripheral location of the station and the facility deficiency in station area had induced much inconvenience to passengers. Although they were excluded from decision-making, their opinion would be captured by the media and would thus be considered in future rounds of HSR station planning. However, these opinions were *ex post facto* feedbacks.

8.4.3. Reinforcing or transforming forces to the existing scalar structure

The planning processes in Wuhan has further confirmed that the realisation/loss of *space-dependent interests* will act as reinforcing/transforming forces to the existing scalar structure (Park, 2008). To be specific, existing scalar configurations will be enforced if regulatory projects at different scales are concordant with one another, whilst they are likely to be challenged when regulatory projects at different scales are mutually in conflict based on different territorially defined interests (ibid). The study also finds that concordant scalar relations would exist in the short-term but might be disequilibrated in the long-term or when the context changed.

The inaction of multi-scalar actors in the station area integrated development in both Wuhan Railway Station and Hankou Railway Station cases was a result of concordant scalar relations. It acted as the reinforcing forces to the existing *scalar division of labour* in station area development and land use management. But this concordant scalar relation was challenged whereafter as the land value capture chances were lost and the interests of passengers were undermined. The failures of integrated development around Wuhan Railway Station and Hankou Railway Station were just typical cases in China in the railway leapfrog development era. Complaints from travellers and the media finally drew the central government's attention (Xinhuanet.com, 2018). Problems include but are not limited to oversize, over-placement, unitary function, and facility deficiency (Chen & Wei, 2013; Dai et al., 2013; Wang et al., 2013).

Furthermore, as the central government were faced with significant financial burdens, they formulated new scalar strategies to rearticulate the scalar structure. The central government

implemented a series of reforms, including the corporatisation of the MOR, the encouragement of non-state actor participation in railway development and the removal of land use constraints on integrated development (see Chapter 4). Therefore, the new scalar restructuring was triggered. The once *governance/institutional gaps* in integrated development have become *institutional overlaps* which may trigger new scalar politics.

On the contrary, the MPA and the setup of the Leading Group and the Rail-Supportive Office (*zhitieban*) acted as useful institutions to facilitate the coordination and negotiation between multi-scalar actors. Consequently, these scalar structures were intensified and have played critical roles in the railway development in Hubei, as exclaimed by the first Executive Director of the Rail Office (Wang, 2019).

An overall consideration of the three cases suggests that the realising/losing of interests and their reinforcing/challenging forces to the existing scalar structure were necessary processes and mechanisms of scalar structuration in rail politics.

8.5. Connecting Scalar Structure, Scalar Interactions and the Planning Outcomes

Rescaling theory finds that the scalar articulation is continually changing (Brenner, 2004a; Swyngedouw, 1996, 2000) and that the state space is contested in everyday life (Brenner, 2000; Lefebvre, 1974). However, it fails to provide an exercisable analytical tool to investigate how actors compete with each other in the contested process. The politics of scale approach is actor-centred and focuses on multi-scalar actors' interactions (Cox, 1998; Park, 2005; Shin et al., 2015). The combined use of these two approaches is good at elaborating the spiral structuration process between scalar structure and scalar interactions (Brenner, 2001; MacLeod & Jones, 2007). Besides, with a notion of the functional duality of the HSR station disclosed by the HSR station planning literature, the analytical framework in the thesis was tested with the three HSR station planning decision-makings in Wuhan and the rail system reform in China. A whole process of the scalar structuration in HSR station space planning has been presented.

The exposition of the changing scalar structure in the rail system in China and a snapshot of the scalar politics presented in the three cases in Wuhan suggest that 1) based on the functional duality of the HSR station, the scalar structure at a particular time in a specific context has empowered not only multi-scalar actors in HSR station planning but also raised different expectations towards the station development; 2) multi-scalar expectations and the scalar division of labour result in two kinds of scalar relations, i.e., inter-scalar tensions and inter-scalar concordances; 3) both scalar relations can induce inter-scalar interactions where various

scalar strategies are employed; 4) the results of inter-scalar interactions are embodied in the change of the built environment (the station space) and the distribution of multi-scalar interests, both of which may lead to rearticulation of the scalar structure and alterations of multi-scalar actors' expectations.

In the current Chinese context, HSR stations provide opportunities for transport accessibility enhancement, urban development and land-sale income increase at the same time. Governments at all scales thus are keen to explore the opportunities arising from station area development. The functional duality of HSR stations requires multi-scalar input and the integration of railway planning and urban planning, which results in multi-player decision-making. The scalar structure determines what resources multi-scalar actors can mobilise, which rules they can leverage or should follow and what responsibilities they should take. In the site selection scenario, both the central government and the local governments are accredited in the decision-making. The institutional overlap (Peters & Pierre, 2001) has changed the conventional legalistic, hierarchical institutional relationships between government levels in China, and a new relationship of negotiated, non-hierarchical exchanges between institutions at different scales is emerging. Based on resources on hand and according to their statutory roles, multi-scalar governments have reasons to believe that the planned HSR stations will bring benefits or at least not incur a loss to their interests. At the same time, there are 'governance gaps' (Pierre, 1999) in the station area planning and development, especially in integrated development. Neither the central nor the local governments are responsible for conducting integrated development in the station vicinity. The institutional arrangements make multi-scalar actors have little or no expectation to enlarge the overall benefit by violating the land use regulations.

The empirical analysis suggests that both conflicting and concordant scalar relations unfold in HSR station planning. The inter-scalar relations are derived from multi-scalar expectations and the scalar structure, which manifested as conflictive or consistent *place-dependent interests*. The realisation/maximisation of the stakes at one scale may undermine the interests at other scales. Scalar tensions are quickly raised when multi-scalar actors have different expectations towards the planned stations or when their power and responsibilities are not aligned with each other (Park, 2007). Scalar concordance comes when multi-scalar interests are evenly distributed (although it is hard to realise) or when multi-scalar actors do not have conflicting expectations towards the planned stations even if their interests are not evenly distributed. Therefore, the actor's expectations play a crucial role in raising tensions or concordance. Their

expectations rely heavily on the scalar structure (including resources and rules). If the station induced interests are strictly defined, which means the violating cost would be high, actors are not likely to cast conflicting expectations.

The scalar tensions can be resolved by building coalitions between multi-scalar actors if their conflicts are negotiable and the shared *space of dependence* can be found, or by mobilising powers in other scales where the *space of engagement* is leveraged (Cox, 1998). A scalar concordance can lead to cooperation, like the case in importing HSR into Hankou Railway Station. Still, it can also lead to inaction, as the case in the station area development in both Hankou Station and Wuhan Station cases. Multi-scalar actors tend to cooperate when the vested *place-dependent interests* are not damaged, and no other risks are raised, whilst they will not act when there is a risk of loss. Both scalar tensions and concordance have triggered inter-scalar politics, where various scalar strategies are used, e.g., building coalitions, mobilising powers at other scales (both higher and lower scales are possible), cooperation, inaction, scaling up and scaling down. During the interaction process, both formal and informal channels are used.

HSR station planning and development is an outcome of multi-scalar interactions around *place-dependent interests*. During the interaction processes, multi-scalar actors' interests may get realised or infringed. Therefore, the planning outcome will induce reshuffling of the scalar distribution of labour and multi-scalar actors' expectations, that is, scalar structuration. The scalar interactions in the contentious siting processes in both Wuhan Railway Station and the New Hanyang Railway Station cases have led to the redistribution of resources and interests. The concordant relationship between the central and local in the Hankou Railway Station case and the New Hanyang Railway Station case saw the formation of coalitions between them. Their cooperative interactions did not act as the intensifying forces to strengthen the existing scalar structure. Instead, the compromise between them has eroded the riding experience of passengers; the land value capture opportunities and has not realised their initial expectations. The inaction of both parties in Wuhan Railway Station vicinity development resulted in delayed station catalysing effects and inconvenience for passengers and the public. These planning outcomes finally triggered the rearticulation of the scalar structure and the readjustment of multi-scalar actors' expectations. The station area planning and development in three cases indicated that not only conflicts but concordant scalar relations could also result in inter-scalar interactions.

The interplay between scalar structures and inter-scalar interactions is thus not unidirectional. In other words, the scalar structure can facilitate/constrain inter-scalar interactions and can also be transformed by inter-scalar interactions (Brenner, 2001). The realisation/loss of multi-scalar actors' anticipated interests will act as reinforcing/transforming forces to the existing scalar structure (Park, 2008). Scalar transformations occur through the spiral interactions between inherited scalar structures and the emergent, transforming regulatory projects and strategies (Brenner, 2001).

8.6. Summary

This chapter reflects on the findings in connection with the existing literature and the conceptual framework. It also elaborates in-depth about the multi-player decision-making nature of HSR station planning, the scalar structure, inter-scalar interactions and the induced outcomes of HSR station planning and development. The research finds that multi-scalar interactions have moulded the trajectory and outcome of HSR stations planning and development in China. The temporary scalar structure in the HSR planning regime results in both conflicting and concordant relations between multi-scalar actors. Not only the tensions but the concordant relations between them can also lead to scalar politics (interactions or inactions), which shape the planning and development outcome and further trigger scalar restructuring. Unlike the contentious interactions that unfolded between multi-scalar governments in site selection where institutional overlaps exist, the governments chose not to engage in integrated development. The out-of-date institutions, or the lack thereof, combined with insufficient incentives, hampered the fulfilment of integrated station area planning and development.

Strong government hands at multiple scales have shaped HSR station area planning and development in China. In contrast, the absence of the private sector and civil society in station site selection and station area development is notable. Within the state sector, the changing division of labour among institutions at different scales of government over the past couple of decades has provided opportunities for negotiated arrangements either to complement or to replace legalistic, hierarchical institutional relationships. However, the inertia of sectoral behaviour to protect their interests undermines those integration opportunities.

9. Conclusion

9.1. Introduction

This final chapter draws together all the knowledge, findings and arguments in this thesis. Section 9.2 summarises the major findings. Section 9.3 outlines the key theoretical and empirical contributions. Section 9.4 provides policy suggestions both for HSR station planning and multi-scalar governance. Section 9.5 discusses the limitations of the thesis, which may lead to follow-on work and future research agendas. Section 9.6 concludes.

9.2. Summary of Findings

The main findings of the thesis are classified into five groups. Each of the conclusions articulates several critical considerations in comprehending the relationships. Overall, they provide concrete answers to the three research questions and accomplish the aims of this PhD research.

9.2.1. *The nature of HSR stations necessitates multi-scalar involvement*

- 1) The nature of HSR station space, i.e., the functional duality (Bertolini, 1996), necessitates multi-stakeholder participation. Specifically, the realisation of the *node* and *place* functions and the syntheses between them desire multi-scalar input and the integration of railway planning and urban planning. Governments and organisations at various scales and from different sectors are thus involved in the planning process.
- 2) Both *node* and *place* functions are instantiated in the three stations in Wuhan, despite their various locations and different temporal and planning settings. All the stations are (will be) critical *nodes* in the transport network, serving multiple modes of intracity and intercity transports. Comparatively, they have weak *place* functions, which are mainly reflected in the induced land-sale and urban (re)development opportunities.
- 3) The involvement of multi-scalar actors derives from the multi-scalar inputs that are necessary for the (re)development of stations. Both tangible (money and land) and intangible (technology and knowledge) resources are critical. Different authorities at various scales possess those resources.
- 4) Due to the large scale of the HSR development in China, financial investments from both central and local governments are indispensable. The unique dual land supply system appoints municipal governments as the *de facto* landowners for all urban land and the

executor in land acquisition for railway station development. The necessity of multi-scalar involvement also stems from the input of intangible resources, i.e., HSR technology and knowledge of the city, which are possessed by the MOR (CRC) and local governments, respectively.

- 5) The functional duality of HSR stations also requires the integration of railway planning and urban planning in the three cases, which aligns with the findings in previous studies (Bertolini & Spit, 2005). It deserves attention in China more than anywhere else because of the institutional segregation of the two systems, the strict separation of land use rights in the station area and the different timing sequences of urban planning and railway planning.
- 6) Different from the HSR station planning and development in the West where the node-based and place-based actors mainly refer to the railway company and developers (or local governments) respectively (Bertolini, 1998; Bertolini et al., 2012), both the two groups of actors in the Wuhan cases are from the government sector. The reason lies in the fact that all the essential resources are in the governments' hands, and even the railway authority belongs to the government sector.
- 7) The planning dilemma induced by the functional duality of stations in China also differs from that in the West. Whilst the latter is often manifest at the operational level and in an inherent sense (Bertolini, 1998), the former derives from the institutional and policy restrictions. The outdated institutions, i.e., '*tiao-kuai*' segmentation of urban planning and railway planning systems, or the lack thereof, along with the lack of appropriate incentives, handicaps the implementation of integrated station area planning and development.

9.2.2. Multi-scalar actors care about their place-dependent interests

- 8) Multi-scalar actors care about their place-dependent interests and have different expectations towards the development of HSR stations. The empirical evidence from Wuhan suggests that external transport accessibility improvement, city image enhancement, urban (re)development/expansion and the induced land-sale opportunities are the most desired impacts of HSR stations. Both local and central officials tend to build landmark projects and vanity projects, which can be labelled as the achievements in their official careers. Also, they are aware of the negative impacts brought by HSRs, e.g., segregation of urban places by railway lines and stations, environmental influence on the urban ecology and the disturbing effects on prime urban land. Multi-scalar actors tend to enlarge the positive impacts and minimise the harmful effects of HSR station development at the scale they position.

- 9) Place-dependent interests (Cox, 1998) are not watertight, that is, they can be infringed or taken away by actors from a different scale, especially when there are *institutional overlaps* (Peters & Pierre, 2001), e.g., the joint participation in station site selection. The realisation/maximisation of the interests at one scale may undermine the interests at other scales. Also, the realisation/maximisation of the claims in one aspect (e.g., transport accessibility) may damage the interests in others (e.g., environmental protection or residential development).
- 10) Multilevel governments give an overall consideration of the various interests and make choices when their interests are conflictive. There are also opportunities for them to engage in enlarging the common interests of all scales, e.g., integrated development of the station area, but a clear and reasonable division of input and interests is the prerequisite. When actors contest with each other, they weigh the scale of input and the scale of reward as these two do not always match with each other. The mismatch between them often results in conflicts, thus demand negotiations.
- 11) HSR station development means different things for different district governments, depending on their geographic locations and the level of economic growth. Well-developed inner-city districts hold the *Not-In-My-Backyard* view, as the station will take up their precious explorable land and the railway lines will split the urban fabric. Underdeveloped outer-city districts view the station as a rare opportunity to enhance local development. In general, all districts welcome the station if the railway lines must go through their jurisdiction. The enhanced external accessibility, cost of construction, and land-scale incomes are all beyond their *place-dependent interests* and are thus out of their considerations.
- 12) Municipal governments count on station induced urban development opportunities and the potential land-sale income but rebel at high-cost land acquisition and any adverse effects to their incubated urban development/renewal projects. They consider both opportunities and threats of the HSR projects and tend to choose the optimal location from the whole city prospect. In terms of station vicinity planning and development, municipal governments do not expect for integrated development because it will damage their vested land-sale incomes.
- 13) Provincial governments care about the overall development of the province or the region, e.g., the '1+8' *city circle* in the Wuhan cases. They actively strive for new HSR lines and stations in their jurisdictions. They believe PDLs and the Intercity HSR Network will

enhance the interregional and intraregional accessibility of the province, whilst stations on the lines will trigger urban (re)development opportunities. The provincial government did not directly participate in the station site selection and station area planning in Wuhan. Still, it would act as the coordinator between the central ministries and the municipality when necessary.

- 14) The Central Government's expectations are relatively comprehensive. For HSR projects, it mainly expects for the enhanced accessibility and urban development opportunities but is also concerned about the construction costs and the induced environmental impacts. It prefers inner-city locations of the station and expects convenient urban transport connection with the station. At the same time, it also considers local development needs. In terms of integrated development of the station area, it neglected the land value capture opportunities before the rail land reform; but tends to enlarge these opportunities to expand incomes to subsidise the rail projects after the reform. Overall, the Central Government views HSR station planning in a broader context and weighed the advantages and disadvantages by discretion.
- 15) The New Hanyang Station case reveals that international investors are trans-scale actors as they are from the global scale (and can mobilise power beyond the recipient country). Still, their territorially defined interests are at the local or project scale. As a result, their siting and station area planning concerns are project-oriented.

9.2.3. Scalar structure leads to conflicting and concordant scalar relations

- 16) The empirical evidence in Wuhan confirms that the scalar structure (i.e., *scalar division of labour*) determines what resources multi-scalar actors can mobilise, which rules they can leverage (or should follow) and what responsibilities they should take. The scalar structure thus leads to multi-scalar expectations and conflictive or consistent *place-dependent interests*, which finally rise to inter-scalar relations, either scalar tensions or concordances.
- 17) Both inter-scalar tensions and inter-scalar concordances exist in HSR station planning in Wuhan. The intensified competition in site selection for Wuhan Railway Station and the New Hanyang Railway Station saw inter-scalar tensions, whilst the importing of HSR into Hankou Railway Station, the planning of the station and its vicinity, and the planning of intraurban transport in all three cases confirmed the existence of a relatively concordant inter-scalar relationship.
- 18) It is also notable that an absolute concordant relationship between multi-scalar actors is impossible. The adjustment of the *scalar division of labour* (in other aspects) (Park, 2008)

will break the equilibrium and bring in potential scalar conflicts. For example, the rail land reforms started in 2013 has removed the restrictions on the integrated and comprehensive development of the station and its vicinity. This scalar structure rearticulation has filled the *governance gap* in station area integrated development but has resulted in conflictive scalar relations in station area planning and rail land allocation.

- 19) Scalar structure for HSR station planning is not only subject to the *scalar division of labour* in the rail sector but also the scalar arrangements in other aspects. The reason is that multi-scalar actors take multiple responsibilities at the same time, and the rail-related resources may also be necessary for different urban agendas. The Central Government ensures the HSR plan is in line with other national policies and regulations. The local governments (including the provincial, municipal and district-level governments) are responsible for various social-economic development of their jurisdictions. The municipal government is also responsible for financing a wide range of public services and urban infrastructure. The scalar arrangements in urban planning, land use management, fiscal management, etc. will all impact HSR station planning (Cao et al., 2008; Li, 2010; Lin & Zhang, 2015).
- 20) An abundance of plan-making rules in China guide the actions of actors at different scales in HSR station planning. Those rules define who should be included in the planning decision-making, what roles they should play and what procedures should they follow. The rules are not restricted in the rail sector but have plan-making rules in other functional sectors, e.g., land use, urban rail transit, urban master plan and environmental protection. Plan-making for various sectors is chronologically staggered, as they are carried out based on different planning sequences. Inevitably, there is inconsistency among different plans which calls for constant amending and revising.
- 21) Railway development plan-making in China follows the top-down planning procedure, whilst the making and revising of various urban development plans take a bottom-up approach. Railway development plans are made on two levels: strategic long (or mid) term plans and the short-term project plans. The central ministries and the MOR in particular, dominate the mid and long-term plan-making. Short term plans are made according to the progress of mid and long-term plans and are initiated by the railway authority. Different from railway development plans, the municipal government prepares other urban development plans based on local conditions and previous plans. For vice-provincial cities like Wuhan, their urban development plans are examined by different central ministries, depending on the functional sector of the program.

- 22) One remarkable feature of the ‘planning rules’ in China is the absence of the private sector and civil society. It is divergent from the HSR station planning cases in Europe and Japan where the railway authorities and governments have to negotiate with developers, landowners and various non-state organisations (Molotch & Vicari, 1988; Peter, 2009). Bureaucratic considerations dominated previous rounds of railway reform and adjustments of *scalar division of labour* between multi-scalar authorities, without breaking up the state monopoly (although the MOR’s monopoly was weakened) (Yin-Nor, 2016). The roles of the non-state sector and the public in railway plan-making and agenda setting are limited.
- 23) HSR station planning unfolds between both formal and informal decision processes. The unique institutional settings and the indigenous governance concepts in China remain crucial when investigating inter-scalar interactions (Hensengerth, 2015). Compared with the existing literature, the empirical study in the thesis has noticed that the Chinese institutional settings have articulated the platforms and channels for multi-scalar interactions, whilst the indigenous governance concepts facilitated the understanding of their relations.
- 24) The traditional ‘*tiao-kuai*’ system remains in force in intergovernmental relations and simultaneously restricts/supports multi-scalar interactions (Lieberthal & Oksenberg, 1988). The unintegrated ‘*kuai-kuai*’ systems between the administrative line and the railway line have created two consequences. One the one hand, the local needs in terms of railway development cannot be reported to the MOR (CRC) through direct formal channels. On the other hand, the parallel of the railway bureaus and the municipalities induces much complexity and uncertainty in railway station planning as the governance is highly fragmented. Within the state sector, each actor is designated with a specific administrative rank, which was critical in formal bureaucracies. Usually, the lower the executive authorities should obey higher administrative commands, and only institutions with the same levels of administrative rank can have equal negotiating positions.
- 25) The cases in Wuhan witnessed the informal channels for communication between levels of authorities. Usually, key decision-makers at various scales are also connected by multiple personal connections, or *guanxi*, through which power can be mobilised to impact the formal decision-making. *Paobu jinjing* is the standard practice for local governments who wants to build their channels to communicate with the central government ministries when concrete *guanxi* is not off-the-shelf. Additionally, calling on the telephone, discussing matters over a meal and informal meetings are other common informal channels for the

communication between scales. During the informal communications, local development plans are promoted, and favourable considerations and support from the central officials are requested.

9.2.4. *Inter-scalar interactions dominate HSR station planning and development*

- 26) Multi-scalar actors formulated various scalar strategies to enlarge their *place-dependent interests* in the planning and development of HSR stations, amidst both tensions and concordances. Building coalitions and mobilising powers in other scales are proved as the major scalar strategies to tackle inter-scalar tensions in HSR station planning. The former aims at specifying the *space of dependence*, whilst the latter seeks to leverage the *space of engagement* (Cox, 1998). In terms of concordant inter-scalar relations, multi-scalar actors will choose to either cooperate or do nothing.
- 27) The station siting processes in the three cases suggest that the building of coalitions could be achieved either by the *territorial power* (Cox, 1998, p. 7) or by discovering the common interests. When the shared *space of dependence* is challenging to build between multi-scalar actors, they will turn to the *space of engagement* to mobilise the power that can suppress their opponents. Both formal and informal networks can be leveraged.
- 28) The thesis also finds that mobilisation of power is not necessarily an upward campaign but can be done in the reverse direction (Cox, 1998, 2010). The larger scale may rely on the local actors to mobilise local resources as they share the *space of dependence* with the local resource owner. The marshalling of power from the general public is also a typical ‘jumping-down’ strategy which is strong enough to withstand the state actors as no government would be openly unsympathetic to public opinions.
- 29) Scholars tend to take it for granted that no tensions between scales demonstrate the fastness of the existing scalar relation, which will further intensify the scalar structure (Shin et al., 2015). The seemingly self-evident argument has covered up the scalar politic under inter-scalar concordances. The three cases in Wuhan show that the concordant relation would not only induce cooperation opportunities but also leads to limited cooperation or even inactions between multi-scalar actors. They tend to cooperate when the vested place-dependent interests are not damaged, and no other risks are raised, whilst they will not act when there is a risk of loss.
- 30) Apart from the scalar strategies that used to forge a solution to inter-scalar tensions or to conserve vested interests under inter-scalar concordance, the thesis has also uncovered some unilateral scalar manipulations. The actors formulated strategies either to scale-up or

scale-down their projects to enhance their interests. They may try to bind local projects with other national or international projects to improve the legitimacy and stringency of their initiatives or to attract developers and investors. They may, at the same time, scale down its projects as local affairs to exclude the interference from other scales.

- 31) The scaling-up of a local project may have adverse effects on the local. The delayed arrival of metro lines in Caidian resulted from the Tug of War on the site selection of the New Hanyang Station was one example of such effect. It aligns with Cox (1998)'s observation that '*the networks of association that some construct in order to secure respective spaces of dependence are in their turn threats to those whose spaces of dependence are at smaller scales*' (p.18).

9.2.5. Planning and development outcomes measure whether or not interest is realised; they determine the existing scalar structure

- 32) The planning of three HSR stations in Wuhan suggests that the inter-scalar interactions are both materialised in the station space and institutionalised in the scalar structure (or, scalar division of labour). Besides, the materialised station space will impact the realisation of place-dependent interests at different scales, which will further lead to reinforcing or transforming forces to the existing scalar structure.
- 33) The planning and development outcomes of the station are materialised in the station space, i.e., location, land use and transport connections, which determines the *node* and *place* functions of the station. The station space finally decided to what extent the *place-dependent interests* at different scales were realised. Each planning outcome was the result of interest balancing between multi-scalar actors at the time of planning. But the temporary concordant relations at the decision-making was not a stable equilibrium as the realisation of the *place-dependent interests* was subject to the evolution of the station space during daily social-economic activities.
- 34) Inter-scalar interactions also resulted in the establishment of new institutions or the reinforcement of existing institutional setup. The MPA was frequently used in HSR development in China, which acted as an effective regime to coordinate multi-scalar interests (Wang et al., 2012; Xu & Yeh, 2013). Both formal (MPA) and informal institutions (*guanxi* and *paobu jinjing*) were mobilised in the Wuhan Railway Station case to build the *space of engagement* between the central and local governments. What distinguishes Wuhan (as well as Hubei) from other places is that the *guanxi* and *paobu*

jinjing based informal institutions were institutionalised into formal organs, that is, the Leading Group and the Rail-Supportive Office (*zhitieban*).

- 35) The three cases in Wuhan have confirmed that interplay between scalar structures and inter-scalar interactions is not unidirectional. In other words, the scalar structure can facilitate/constrain inter-scalar interactions and can also be transformed by inter-scalar interactions (Brenner, 2001). HSR station planning is a process of scalar structuration. HSR station planning and development is an outcome of multi-scalar interactions around *place-dependent interests*. During the interaction processes, multi-scalar actors' interests may get realised or infringed. Therefore, the planning and development outcome will induce reshuffling of the scalar division of labour and multi-scalar actors' expectations, that is, scalar structuration.
- 36) The results of inter-scalar interactions are embodied in the change of the station space and the distribution of multi-scalar interests, both of which may lead to rearticulation of the scalar structure and alterations of multi-scalar actors' expectations. The realising/losing of interests and their reinforcing/challenging forces to the existing scalar structure were necessary processes and mechanisms of scalar structuration in rail politics.
- 37) One remarkable feature of the HSR station decision-making in China is the absence of non-state sector participation, including that from the general public. However, the three cases in Wuhan show that the private developer (who overrules the municipal plan), the foreign planners for the eco-city project and the public can shape the outcome of scalar politics. Both the private developer and the foreign planners could also use scalar strategies (adhere to market rules or manipulate diplomatic instruments) to defend their interests. The interests of the general public, especially the passengers, were realised or undermined when the station was put into use. Although they were excluded from decision-making, their opinion would be captured by the media and would be considered in future rounds of HSR station planning. However, these opinions were *ex post facto* feedbacks.

9.3. Contributions

9.3.1. Theoretical contributions

The research findings presented in this thesis offer an original contribution to the knowledge of HSR station planning and the induced inter-scalar interactions by addressing the gaps identified in Chapter 2. It also bears the potential of developing the existing studies on scalar politics and multi-scalar governance in mega-infrastructure planning.

The first theoretical contribution of this research lies in extending the theory of station functional duality and filling the gap of the inter-scalar interactions in HSR station planning. The conceptualisation of HSR stations' dichotomy as *node* and *place* suggests that their planning and development involve multi-sector and multi-scalar decision-making (Bertolini, 1996, 1998). Nevertheless, the existing literature is lopsided towards the study of the inter-sector interactions (transport-based versus urban-based) without adequate attention to the inter-scalar interactions. This study develops the functional duality theory by identifying the necessity of multi-scalar input and multi-scalar participation in HSR station planning. Furthermore, it provides evidence to fill the research gaps that constrain the development of relevant theories and knowledge about inter-scalar interactions in HSR station (or other mega-infrastructure) planning. The three cases in Wuhan suggest that HSR station planning decision-makings are dominated by inter-scalar interactions in China, which is different from those in the West (Bertolini & Spit, 2005; Peek & Louw, 2008).

The second theoretical contribution of this research rests on the proposal of a scale-sensitive analytical framework which combines the analyses of station space (planning object), scalar structure (planning context) and scalar interactions (planning process). It is developed based on the 'planning triangle' discussed in Bertolini and Spit (2005, p. 4) and the 'balanced theorisation' elaborated in Hartmann and Geertman (2016, p. 67), to understand how power is constructed, deconstructed or reconstructed among multi-scalar actors and how it is connected with the speciality of the station space. Compared with the very few pieces of literature which have set foot in the inter-scalar dynamics in HSR planning (Xu, 2017; Zhang et al., 2020), this research has linked the nature of the planning object (functional duality) with the planning process and context. Also, it goes beyond the merely empirical test of the scalar politics theory with the rail evidence. Furthermore, this study bridges the space of functions with the space of planning, that is, the interplay between the built environment and the institutions and actors. Multi-scalar interactions are not only institutionalised but also materialised in the (station) built environment, which will, in turn, trigger institutional rearticulation and eventually impact future rounds of station planning.

The third noticeable theoretical contribution of this study is the combined use of the rescaling approach and the politics of scale approach. Rescaling theory finds that scalar articulation is continuously changing (Brenner, 2004a; Swyngedouw, 1996, 2000) and that the state space is contested in everyday life (Brenner, 2000; Lefebvre, 1974). Nevertheless, it fails to provide an exercisable analytical tool to investigate how actors compete with each other in the contested

process. The politics of scale approach, however, is actor-centred and focuses on multi-scalar actors' interactions (Cox, 1998; Park, 2005; Shin et al., 2015). The combined use of these two approaches is good at elaborating the two-way structuration process between scalar structure and scalar interactions (Brenner, 2001; MacLeod & Jones, 2007). Scalar structuration is undoubtedly not a new idea (Brenner, 2001; MacKinnon, 2011). However, this study offers an exercisable analytical toolkit to dissect the complicated interactive process, especially in mega-infrastructure planning. The key variables are identified, and their relations are justified with the evidence in Wuhan.

A scale-sensitive interpretation of the HSR station planning decision-making and the institutional changes together with a cross-fertilising of the scalar politics theory and Chinese governance concepts lead to the fourth innovative feature of this research. The traditional '*tiao-kuai*' system remains in force in intergovernmental relations, restricting and enabling inter-scalar interactions simultaneously. The unintegrated '*kuai-kuai*' systems between the administrative line and the railway line have further increased the governance fragmentation, whilst the evolving central-local relations mirrors the changing scalar structure in railway planning and development. The administrative hierarchy and the functional bureaucracy remain crucial in inter-scalar interactions, which not only signify the hierarchical power relations that exist between the central government and the various levels of local governments but also contribute to the formation of cross-sector and cross-scale links (Hensengerth, 2015; Smith, 1992). Furthermore, the study finds that HSR planning unfolds between both formal and informal decision processes (Yang & Han, 2020), where *guanxi* and *paobu jinjing* are used to facilitate the construction of the *space of engagement* (Cox, 1998). The conceptualisation of the Chinese terms' scalar meanings not only promote a systematic understanding of rail politics but also help the scalar politics theory to find its footholds and tool kit in the Chinese context.

9.3.2. Empirical contributions

This strength of the thesis also lies in providing evidence to fill the empirical research gaps in HSR station planning in China. Four noteworthy contributions are summarised here. Firstly, this research has conducted a throughout investigation of the institutional and policy changes in the railway system in China in Chapter 4, with a focus on the changing scalar division of labour induced by previous rounds and the ongoing reforms in the sector. The investigation not only reveals the shifts of power, mechanism and resource distribution of HSR station planning in China but also constitutes one of the dual dimensions of *scalar politics* (or *scalar*

structuration) (Brenner, 2001; MacKinnon, 2011), that is, the changing scalar structure of the scalar politics. With an integrated examination of the planning of three stations, the study thus shows the changes of the scalar structure and the interactive relations of the scalar structure and scalar interactions.

Secondly, the chosen case study city in this research – Wuhan – is unique and timely. Wuhan is unique as it is located at the geographical centre of China and functions as one of the four largest railway hubs in the HSR network. Wuhan is now being served by multiple railway lines and stations and has undergone rapid railway development, which could be seen as an epitome of China's HSR development. Additionally, the status of 'sub-provincial city' means Wuhan has a high level of urban and economic development autonomy which assures its unique bargaining power in HSR station planning decision-making. The case study is timely because empirical studies on HSR station planning in Wuhan is limited, and this study thus fills in the gap. Furthermore, there is currently one HSR station under planning in Wuhan, which could provide timely and comprehensive information on the planning process. The planned new station (i.e., the New Hanyang Station) represents another round of large-scale HSR development in China. The study of Wuhan will provide valuable, timely lessons for other cities.

Thirdly, the thesis has done a comprehensive and integrated analysis of the whole process of HSR station planning and development, which contributes to an interrogation of both inter-scalar tensions and inter-scalar concordance. Research on HSR planning concentrates on the conflictive siting process (for both lines and stations) (Xu, 2017; Xu & Yeh, 2013; Zhang et al., 2020). As a result, the collaborative opportunities between multi-scalar actors in the processes of station design, station vicinity planning and the intraurban transport planning are ignored. This study covers the whole process of HSR station planning and development and proves the coexistence of both inter-scalar tensions and concordance. Furthermore, it reveals the inter-scalar interactions and the applied scalar strategies under concordant scalar relations, apart from those in the conflicting scalar relations. The literature on the politics of scale mainly focuses on interactions caused by inter-scalar tensions (Cox, 1998; Park, 2008; Swyngedouw, 1997), even though the concordant relation between scales is acknowledged (Shin et al., 2015). Scholars tend to take it for granted that no tensions between scales demonstrate the fastness of the existing scalar relation, which will further intensify the scalar structure (Shin et al., 2015). The seemingly self-evident argument has covered up the scalar politics under inter-scalar concordances. Consequently, this finding has both empirical and theoretical implications.

The last but not least empirical significance of the thesis lies in the employment of the multi-case study approach, which helps to conduct comprehensive and systematic research of scalar politics in the planning of HSR stations of a different type. Three HSR stations in Wuhan are chosen as the study cases of this research: Hankou Railway Station (an upgraded station located in the downtown area), Wuhan Railway Station (a newly-built station sits at the city edge) and New Hanyang Railway Station (a station under planning and locates in the urban periphery). Additionally, the three stations in Wuhan were planned and developed in different institutional settings. The study thus reveals the similarities, differences and connections of the planning processes of different stations.

9.4. Policy Suggestions

The relevance of this PhD study goes beyond academia and has potential policy-making implications. In particular, two aspects of policy suggestions, i.e., HSR station planning and multi-scalar governance can be generated from the study. These suggestions are not only relevant to policymakers in China but have direct or indirect implications for HSR and other mega urban project planning decision-makings in many countries.

9.4.1. Suggestions for HSR station planning

Given that the railway sector is a traditional industry that is under marketisation and privatisation reforms, policy suggestions can be brought forward from various aspects. However, based on the findings in this thesis, three recommendations to policymakers are highlighted here.

The first recommendation lies in the nature of HSR stations – the functional duality. The planning of HSR stations should go beyond the physical planning and pay attention to the ‘soft’ side of the station space planning. It is consistent with the suggestion of a synthesis between *node* and *place* functions made by Bertolini (1996) and his successors but emphasises more about the planning and management (soft) side. In other words, the human factors and the institutional constraints (e.g., institutional segregation of the rail system and urban management system and the strict division of labour between authorities at different scales in China) should be avoided. The three cases in Wuhan indicates that the planning of HSR stations is not only about the planning of the physical buildings and facilities but also the sequential constructions and integrated development of these planning objects. The reciprocal relations between them are essential for the successful development of the station. Even if the station is built into a multi-model modern transport complex, its (transport) function cannot be fully realised without

an integrated consideration of the station and its vicinity. It is relevant even early in the site selection stage.

The second recommendation originates from the multi-scalar decision-making feature of HSR station planning. The station is not a solo project, but, at the same time, an important national project and local project, especially for critical stations in the HSR network. It necessitates multi-scalar inputs and involves the *place-dependent interests* at various scales. There are inevitable conflicts of interest between different scales. So, the scalar division of benefits brought by the stations should be negotiable, rather than being designated by fixed policies. In China, the institutional and policy settings have assigned all rail-related revenue to the national railway authority and attributed the land-sale income to the local governments. This institutional arrangement has influenced multi-scalar actors' inputs for the project, which is manifest in site selection, land use planning and intraurban transport provision. A reasonable profit-sharing mechanism for multi-scalar authorities is thus critical for the optimisation of the station project.

Incorporating non-state players into decision-making is the third recommendation for HSR station planning. One remarkable feature of HSR station planning in China is the absence of the private sector and civil society. Nevertheless, bureaucratic considerations have dominated previous rounds of railway reforms, and the state has always been the primary locus of decision-making. Without breaking-up the state monopoly in the rail industry, the private sector and the civil society would shy away or be shut off from the policy-making. (Yin-Nor, 2016). The result is that the stations are develop-oriented but not user-oriented nor profit-oriented. The stations are sited in the urban periphery to expand the metropolitan area but have damaged the passengers' interests. The land value capture opportunities are neglected, given that the project will be financed mainly by the Central Government. The involvement of non-state actors (market players and the general public) will address these problems, although the planning processes may become more complicated. It is worth and inescapable to do so because the current HSR station development model in China is both financially and developmentally unsustainable, which will trigger constant scalar politics.

9.4.2. Suggestions for multi-scalar governance

Lessons drawn from the HSR station planning is also relevant to other multi-scalar governances. Four policy suggestions are generated from the research findings. It should be noted that these

suggestions are not dedicated to one single policymaker at a specific scale but apply to the whole governance. It is because multi-scalar governance is a collective provision.

Firstly, pay attention to integrated policymaking since the scalar structure is multi-faceted. The *scalar division of labour* in a given sector will have an impact on other sectors. For instance, the scalar structure for HSR station planning is not only subject to the *scalar division of labour* in the rail sector but also the scalar arrangements in other aspects. The reason is that multi-scalar actors take multiple responsibilities at the same time, and the rail-related resources may also be necessary for different urban agendas. Governments at all levels must ensure the HSR plan is in line with other (national) policies and regulations. The subnational governments (including the provincial, municipal and district-level governments) are responsible for various social-economic development of their jurisdictions. They are also responsible for financing a wide range of public services and urban infrastructure. The scalar arrangements in urban planning, land use management, fiscal management, etc. will all impact HSR station planning (Cao et al., 2008; Li, 2010; Lin & Zhang, 2015). Regarding different sectors' co-influence, it is essential to pay attention to integrated policy making when one wants to reach a scalar concordance in a given field.

Secondly, acknowledge and respect the unique traditional institutional settings. The institutional settings in China remain crucial when investigating inter-scalar interactions (Hensengerth, 2015). The indigenous governance concepts like *tiao*, *kuai*, *xitong* and central-local relations indicate that the multi-scalar connections are not neatly layered but are highly fragmented, shown as the 'mosaics of scalar organization' (Brenner, 2004a, p. 10). Furthermore, scalar structuration is path-dependent, so previous rounds of scalar fixes may still have an impact on the current policy. It is, therefore, necessary to take into account the traditional institutional setting and the historical background when manipulating multi-scalar governance.

Thirdly, pay attention to both formal and informal processes. It is because multi-scalar interactions unfold between both formal and informal decision processes. Many cross-scale coalitions are built through everyday communications. It is inevitable as informal networks are all over the place in social practices. Therefore, it should be noticed that formal and informal processes are equally important and formal restructuring may build coalitions to exclude other actors at a different scale.

Lastly, empower the very 'small-scale' actors and ensure their participation rights in the decision-making process. The delayed arrival of metro lines in Caidian resulted from the Tug

of War on the site selection of New Hanyang Station suggests that the *place-dependent interests* of small-scale actors are threatened if they are excluded from the decision-making. Furthermore, it is necessary to understand that the strict top-down hierarchy approach is not conducive for the efficient multi-scalar governance and the negotiable relations are critical.

9.5. Limitations

Despite the author's best efforts, the thesis has its limitations which deserve follow-on work. These limitations, however, do not impede the research to achieve its objectives, nor do they influence the conclusions of the thesis, but lead to potential research agendas.

First of all, this study has treated the railway authority, i.e., the MOR and CRC as a monolithic whole in the station planning decision-making processes. However, there is a detailed dissection of their internal organisations in Chapter 4. Two aspects of fact account for the analytical simplification. On the one hand, the railway authority and its subordinate *kuai-kuai* (territorial organs) – the regional railway bureaus (Wuhan Railway Bureau in this case) are separated from the administrative system, i.e., the urban management system (as discussed throughout the thesis). The MOR (or, CRC) had an absolute monopoly over the railway bureaus in terms of HSR (both route and station) planning. Thus, the rail system's opinion on HSR station planning has been highly concordant. They acted as one in the planning decision-making. On the other hand, the railway bureaus are mainly responsible for the operation of the stations and the trains running within their jurisdictions, and their role in station planning has been minimal. The analytical simplification in the thesis has sharpened the exposition of scalar politics in HSR station decision-making and the tensions between the rail system and the urban system. Nevertheless, what should be made clear is that the monolithic whole of the railway authority may be arguably a temporary phenomenon. The reason is that the railway bureaus are being assigned with more responsibilities in railway plan-making (being asked to take part in local urban plan making by the CRC) and the potential comprehensive development of station areas. The railway bureaus hold the promise of becoming active players in the HSR station planning decision-making in the future. By that time, the deficiency of this research, i.e., the limited attention paid to the role of regional railway bureaus in HSR station decision-making, will become harsh and thus need updating.

The second shortcoming of the research lies in the unaccomplished land use planning for the New Hanyang Railway Station, which fails to provide a whole integrated case for the examination of the land use changes after a series of railway reforms. The prolonged

negotiation for the site selection of the station and the outbreak of COVID-19 accounted for the delays. However, it does not go beyond the initial plan of this PhD study as the plan expected the intense inter-scalar interaction. Furthermore, the fiercely contested site selection decision-making has wholly and utterly presented the scalar politics in HSR station planning, which was quite a blessing in disguise. As discussed in the thesis, despite the land use restrictions for rail land has been theoretically removed in 2014, HSR station (re)developments in China saw few attempts in station or station area integrated development. The inter-scalar concordance has just been transformed into potential inter-scalar tensions. The New Hanyang Railway Station case indicates that both the railway authority and the local governments are novices in station area integrated development, and both are afraid of any damages to their vested interests. Hence, scalar politics in the integrated station area development in China still calls for close observation and further studies.

Lastly, the research does not provide a quantitative evaluation of the ‘planning outcomes’ and their impacts on the HSR project or the local development, e.g., the transport accessibility losses/advantages compared with other siting alternatives, the rate of return on investment of the station or the whole HSR project and the induced urban land use changes or business density changes. Quantitative analyses may help strengthen the explanation of multi-scalar actors’ strategies and the strategy changes, though they are not essential for the study of scalar politics. Quantitative data like investment costs and revenues for a railway project in China is hard to obtain. Besides, without a reliable reference standard, these quantitative analyses would just turn to simulation evaluations, and the horizontal comparisons with other cities or projects would lack reliability, credibility and universality. Furthermore, multi-scalar actors do not make decisions based on accurate calculations or tangible gain and loss. So, the analysis of the rationales behind their actions will not be undermined by the deficiency of quantitative evaluation. That said, a quantification of the *place-dependent interests* at various scales would still be fascinating and of great importance. The methodological findings in the quantitative assessment would also serve the planning practices (investment analysis) of the policymakers at different scales.

9.6. Conclusion

HSR station planning unfolds in complex situations characterised by inherent contradictions derived from the duality of the stations and divergent forces from multi-sector and multi-scalar participation: Decision-making develops between central authority, local autonomous

decision-making and the involvement of international parties, between formal and informal interactions, and between the privilege of governmental actors and bottom-up pressures private sector and the civil society. The result highlights the contradictions between a seemingly rigid hierarchical governance structure and a fragmented and contentious decision process.

This PhD research has extended the existing literature by probing into the multi-scalar decision-making in the planning and development of three HSR stations in Wuhan, China via a conceptual framework that combines the analyses of station space (planning object), scalar structure (planning context) and scalar interactions (planning process). Different from the previous work that emphasised inter-sector interactions at one particular scale (Bertolini & Spit, 2005; Chorus & Bertolini, 2011; Peek et al., 2007) and that with a focus on the conflicting siting process (Li et al., 2014; Xu, 2017; Xu & Yeh, 2013; Zhang et al., 2020), this study reveals that scalar politics between authorities from multiple scales dominate HSR station planning decision-making in China.

The nature of HSR station space, i.e., the functional duality (Bertolini, 1996), necessitates multi-stakeholder participation. Specifically, the realisation of the *node* and *place* functions and the syntheses between them desire multi-scalar input and the integration of railway planning and urban planning. Multi-scalar actors care about their *place-dependent interests* and have different expectations towards the development of HSR stations, among which external transport accessibility improvement, city image enhancement, urban (re)development/expansion and the induced land-sale opportunities are the most desired impacts of HSR stations. They are also aware of the negative effects brought by HSRs, e.g., segregation of urban places by railway lines and stations, environmental influence on the urban ecology and the disturbing effects on prime urban land. Multi-scalar actors tend to enlarge the positive impacts and minimise the harmful effects of HSR station development at the scale they position.

The scalar structure (i.e., scalar division of labour) determines what resources multi-scalar actors can mobilise, which rules they can leverage (or should follow) and what responsibilities they should take. It thus leads to multi-scalar expectations and conflicting or consistent *place-dependent interests*, which finally rise to inter-scalar relations, either scalar tensions or concordances. The intensified competition in site selection for Wuhan Railway Station and the New Hanyang Railway Station saw inter-scalar tensions, whilst the importing of HSR into Hankou Railway Station, the planning of the station and its vicinity, and the planning of

intraurban transport in all three cases confirmed the existence of a relatively concordant inter-scalar relationship.

HSR station planning unfolds between both formal and informal decision processes. The unique institutional settings and the indigenous governance concepts in China remain crucial when investigating inter-scalar interactions (Hensengerth, 2015). Multi-scalar actors formulated various scalar strategies to enlarge their *place-dependent interests* in the planning and development of HSR stations, amidst both tensions and concordances. Building coalitions and mobilising powers in other scales are proved as the major scalar strategies to tackle inter-scalar tensions in HSR station planning. In terms of concordant inter-scalar relations, multi-scalar actors will choose to either cooperate or do nothing. During the process, both scalar practices and discourses are used to build the coalition, either within the existing ‘space of dependence’ or construct the new ‘space of engagement’ (Brenner, 2001; MacKinnon, 2011). New scales for regulation can be built along with the construction of ‘space of engagement’, and both scalar practices and discourses may be institutionalised.

Multi-scalar interactions are not only institutionalised but also materialised in the station space, including the location of the station, land use layout in the station area and the intraurban transport arrangements. The planning outcome signifies the realisation or losing of the *place-dependent interests* for multi-scalar actors, which will act as the corresponding intensifying or transforming forces to the existing scalar structure. Existing scalar configurations will be enforced if regulatory projects at different scales are concordant with one another, whilst they are likely to be challenged when regulatory projects at different scales are mutually in conflict based on different territorially defined interests (Park, 2008). Scalar transformations occur through the spiral interactions between inherited scalar structures and the emergent, transforming regulatory projects and strategies (Brenner, 2001). HSR station planning decision-making is a two-way structuration process between scalar structure and scalar interactions.

One remarkable feature of the HSR station decision-making in China is the absence of the private sector and civil society. The previous rounds of railway reform and adjustments of the scalar division of labour between multi-scalar authorities were dominated by bureaucratic considerations with the state as the primary locus of policy-making (Yin-Nor, 2016). The roles of the non-state sector and the public in railway plan-making and agenda setting are limited. Nevertheless, there are signs that the Chinese governments are seeking to work with the private

sector in railway investment (initiatives at the national scale) and station area development (initiatives at the local scale). It shows a similar but somewhat weaker tendency, at least in the rail sector, of '*giv[ing] greater privilege and status to the private sector*' than in the West (Salet & Thornley, 2007, p. 190). Within the state sector, the stereotype perception of the singular, unilateral role of the central government in development decision-making is no longer the case (Yang & Han, 2020). Even for the infrastructure of such national importance as the expansion of the high-speed rail network, negotiations over the siting and development of the station vicinity involve multi-scalar negotiations between the central and subnational governments. Despite that governmental hierarchical approach will continue to provide solutions to scalar conflicts in the planning processes in China's foreseeable future, the government's involvement will become less hierarchical, less centralised and less directive in character.

Some more observations can be made regarding the scalar politics in managing city-region development opportunities raised by HSR station planning and development. The cases show the shared aspiration of multi-scalar actors to incorporate inter-city HSR network into the stations. The integration of multilayer transport would enhance both inter- and intra-regional connection and thus in favour of city-region development. However, regional integration has never been significant considerations in either site selection, intraurban transport connection or land use planning for the three stations. The inter-city HSR lines were/will be introduced into the four main passenger railway stations in Wuhan (also include Wuchang Railway Station) based solely on the principle of proximity. The reason lies in the fact that the trunk line and inter-city line projects were mutually independent, and more importantly, stakeholders from surrounding cities are excluded from decision-making. Players from the central scale concerned with the overall efficiency of the trunk line project, whilst Wuhan Municipal Government cared more about local development and land-sale opportunities. The provincial government should have played the role to coordinate regional development. Nevertheless, due to the critical position of Wuhan in the '1+8' city circle, Hubei Provincial Government also valued the prosperity of Wuhan highly. The cases show the 'multi-scalarism' of governing city-regions (Evers & de Vries, 2013, p. 538) and confirm that hierarchy and consolidation of powers at larger scales, while important, is no panacea for multi-scalar decision-making problems in managing city-region development (Innes et al., 2011).

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Appendices

Appendix A – Interview Outline

Interviews were semi-structured, and these questions were used as a guideline.

General

- ☐ Could you give me the general background of the station (re)development project?
- ☐ Could you briefly specify your organisation's function and the nature of its involvement in this project?
- ☐ What is the main reason, in your opinion, for your organisation to be involved in the project?
- ☐ Could you give a brief summary of your roles and responsibilities in that project?
- ☐ In your opinion, what are, generally speaking, the main objectives of the project?
- ☐ In preparation for the project, did you visit or study other projects which provided ideas or inspiration for the project?
- ☐ Which other projects did you visit or study?
- ☐ Which aspects of these projects are most impressive?
- ☐ Which aspects are, in your opinion, the most important with regard to the successful development of an HSR station?

Interactions with other organisations

- ☐ Are there any other organisations that are involved in the planning process? What are their functions and their involvements in this project?
- ☐ Do you have any disagreements with other organisations? What is it about? Did you reach an agreement on this issue? How?
- ☐ Which organisation(s) share common view with yours?
- ☐ Which aspects are, in your opinion, the most important with regard to national, regional, urban, local development? What if they are in conflict with your own administrative objectives?
- ☐ Do you have any other approaches to express your concerns about the plan, except for the regular meetings?
- ☐ Which aspects do you want to modify most for the current project plan?
- ☐ Which organisation, in your opinion, has played an important role in the planning process?

Appendix B – List of Interviewees

Informant No.	Affiliation	Department	Interview Date	Time Range
1	Municipal Planning Bureau	Municipal traffic planning	1/11/2017	17:30-19:30
2		Municipal traffic planning	17/11/2017	16:10-17:00
3	Municipal Planning Institute	Municipal traffic planning	1/11/2017	17:30-19:30
4		Municipal traffic planning	1/11/2017	17:30-19:30
5		Land-use planning	15/11/2017	09:30-10:30
6		Land use planning	16/11/2017	11:00-12:30
7	Railway Survey and Design Institute (A)	Routing & Site selection	14/05/2018	18:00-20:00
8		Engineering	15/05/2018	14:00-15:00
9	Railway Survey and Design Institute (B)	Routing & Site selection	17/05/2018	11:55-13:32
10		Routing & Site selection	18/05/2018	18:00-21:00
11		Economic calculation	19/05/2018	11:50-13:40
12		Hub planning	22/05/2018	14:30-15:20
13		Hub planning	28/05/2018	14:00-15:20
14	Wuhan Railway Bureau	Economic development office	4/06/2018	18:10-18:30
15	Municipal land Consolidation & Reserve Agency	Land consolidation and reserve	25/05/2018	19:10-20:00
16		Land supply	25/05/2018	19:10-20:00
17	Municipal Planning Bureau	Municipal traffic planning	18/05/2018	12:20-13:44
18		Land use planning	22/05/2018	10:25-11:40
19		Municipal traffic planning	27/05/2018	18:10-20:15
20		Municipal traffic planning	27/05/2018	18:10-20:15
21	Municipal Planning Institute	Municipal traffic planning	20/05/2018	18:00-20:00
22		Municipal traffic planning	20/05/2018	18:00-20:00
23		Land use planning	20/05/2018	18:00-20:00
24		City master plan-making	21/05/2018	11:10-11:22
25		Municipal traffic planning	21/05/2018	09:00-10:17
26		Chief engineer	27/05/2018	12:50-14:20
27	Private Developer (A)	Investment analysis	23/05/2018	13:00-13:53
28	Private Developer (B)	Station area development	25/05/2018	10:30-11:00
29	Private Developer (C)	Station area development	26/05/2018	13:00-14:55
30	Ministry of Natural Resources (former MLR)	Land use administration	1/06/2018	12:00-13:30
31		Land use administration	1/06/2018	12:00-13:30
32	Department of Land Management of Hubei Province	Land use administration	22/05/2018	10:00-10:30
33	Wuhan Municipal Government	Land use planning	26/05/2018	09:30-11:00
34	China Railway (former Ministry of Railways)	Project evaluation centre	5/09/2018	10:20-11:00
35	University (A)	Transport planning faculty	18/05/2018	09:00-11:00
36	University (B)	Urban planning faculty	1/06/2018	16:00-17:30
37	Municipal Planning Bureau	Municipal traffic planning	29/10/2019	13:20-14:20
38		Land use planning	29/10/2019	18:30-19:10
39	Municipal Planning Institute	Municipal traffic planning	30/05/2020	18:00-20:00
40		Municipal traffic planning	5/06/2020	14:10-15:20
41		Land use planning	10/06/2020	15:00-15:30

Appendix C – High-Speed Rail Station Planning Related Policy Documents

No.	Document-issuing agency	Year	Title
	Central government		
1	State Council	1992	中华人民共和国铁路法
2	State Council	1992	铁路用地管理办法
3	State Council	1992	铁路用地管理办法
4	State Council	2004	铁路运输安全保护条例
5	State Council	2004	中长期铁路网规划
6	State Council	1998	国务院办公厅关于印发铁道部职能配置内设机构和人员编制规定的通知
7	State Council	2008	中长期铁路网规划
8	State Council	2012	国务院关于城市优先发展公共交通的指导意见
9	State Council	2013	国务院关于改革铁路投融资体制 加快推进铁路建设的意见
10	State Council	2013	国务院关于组建中国铁路总公司有关问题的批复
11	State Council	2014	国务院办公厅关于支持铁路建设实施土地综合开发的意见
12	State Council	2014	国务院关于创新重点领域投融资机制鼓励社会投资的指导意见
13	State Council	2016	中长期铁路网规划
14	National Development and Reform Commission	2014	关于印发《铁路发展基金管理办法》的通知
15	National Development and Reform Commission	2016	国家发展改革委印发《关于打造现代综合客运枢纽提高旅客出行质量效率的实施意见》的通知
16	National Development and Reform Commission	2017	关于促进市域（郊）铁路发展的指导意见
17	National Development and Reform Commission	2018	关于推进高铁站周边区域合理开发建设的指导意见
18	Ministry of Construction	1996	关于批准发布《新建铁路工程项目建设用地指标》的通知
19	Ministry of Housing and Urban-Rural Development	2015	住房和城乡建设部关于加强铁路站场地区综合开发有关规划工作的通知
20	Ministry of Land and Resources	2000	关于认真贯彻执行公路铁路建设用地指标的通知
21	Ministry of Railways	1999	GB50091-1999 铁路车站及枢纽设计规范
22	Ministry of Railways	2006	GB 50091-2006《铁路车站及枢纽设计规范》
23	Ministry of Railways	2017	市域铁路设计规范 征求意见稿 2017
24	State Railway Administration	2014	TB10623-2014 城际铁路设计规范
25	State Railway Administration	2017	TB-10099-2017 铁路车站及枢纽设计规范
26	China Railway	2014	铁路土地综合开发实施办法
27	China Railway	2014	关于切实做好铁路建设项目土地综合开发有关工作的通知
28	China Railway	2014	中国铁路总公司关于印发《中国铁路总公司资产经营开发管理办法》的通知

29	China Railway	2014	中国铁路总公司关于加强铁路建设项目征地拆迁工作的指导意见
30	China Railway	2015	中国铁路总公司关于印发《铁路用地管理办法》的通知
31	China Railway	2016	中国铁路总公司关于进一步明确土地综合开发有关事项的通知
32	China Railway	2016	转发住房城乡建设部关于加强铁路站场地区综合开发有关规划工作的通知
33	China Railway	2017	武汉铁路枢纽规划批复
34	China Railway	2017	关于进一步加强铁路建设项目征地拆迁工作和费用管理的指导意见
Provincial Government			
35	Hubei Provincial Government	2005	湖北省人民政府办公厅关于做好支持我省境内铁路建设工作的通知
36	Hubei Provincial Government	2005	湖北省人民政府办公厅关于做好支持我省境内铁路建设工作的通知
37	Hubei Provincial Government	2007	武汉城市圈总体规划纲要
38	Hubei Provincial Government	2013	湖北省人民政府关于加强武汉城市圈城际铁路沿线土地综合开发的意见
39	Hubei Provincial Government	2018	湖北省人民政府关于进一步加快铁路建设发展的若干意见
Municipal Government			
40	Wuhan Municipal Government	1996	武汉市城市总体规划(1996-2020 年)
41	Wuhan Municipal Government	1997	武汉市土地利用总体规划(1997 — 2010 年)
42	Wuhan Municipal Government	2006	武汉市总体规划 2006-2020
43	Wuhan Municipal Government	2006	武汉市土地利用总体规划 (2006-2020 年)
44	Wuhan Municipal Government	2009	武汉市综合交通规划 (2009—2020 年)
45	Wuhan Municipal Government	2010	武汉市土地利用总体规划 (2010-2020 年) 调整完善成果
46	Wuhan Municipal Government	2010	武汉市总体规划 2010-2020 年
47	Wuhan Municipal Government	2010	武汉东湖风景名胜区总体规划 (2010-2025 年)
48	Wuhan Municipal Government	2011	武汉东湖风景名胜区总体规划 (2011-2025 年)
49	Wuhan Municipal Government	2014	武汉市轨道交通线网规划修编 (2014-2049 年)
50	Wuhan Municipal Government	2016	武汉市人民政府关于编制总体规划和土地利用规划的指导意见
51	Wuhan Municipal Government	2016	武汉市综合交通体系规划修编 (2016—2030 年)
52	Wuhan Municipal Government	2017	武汉市综合交通示范工程实施方案