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Logistical fixes and China's spatial division of logistics integration - in search of economic rebalancing?

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Abstract

This article analytically foregrounds the role of logistics, infrastructure, and the transformation of capitalist circulation as an integral component of Chinese capitalism's changing developmental paradigm. Based on a historical-comparative study of two developmental paradigms, the Open Door Policy (1978-2013) and New Normal (2014-2021), we argue that two layered logistical fixes have shaped Chinese capitalism, while driving unequal regional development between the coastal and inland regions. During the Open Door Policy, the initial logistical fix was centered around the coastal region as an export platform and logistical hub. Consequently, networked spaces of capital accumulation were formed based on the transfer of raw materials and intermediary inputs from the inland to the coastal region, followed by their processing into marketable commodities valorized in global export markets. Following China's transition to the New Normal, the emergence of a new spatial division of labor between the coastal and inland regions necessitated a new logistical fix. This new logistical fix is notably centered around the inland region as a logistical hub, from which capital circulation and infrastructural linkages with neighboring Asian and coastal regions are being built.

Keywords: spatial planning; logistical fixes; regional development; coastal-inland relations; spatial division of logistics integration

Introduction

An integral aspect of China's meteoric rise has been the role of the Chinese state in spatial planning, which has molded the geographies of Chinese capitalism, facilitating its integration with the global economy. The successful integration of the Chinese economy with global export markets has been predicated on the spatial division of labor between its coastal and inland regions. To this end, the coastal region has been targeted for the selective integration with global production networks based on its comparative advantages in terms of productivity, capital, and human resources (Yang 1991; Fan 1997). To this end, the Chinese Communist Party (CCP) mobilized Chinese state institutions "to channel socioeconomic assets and advanced infrastructure investments" (Brenner 2004,

214) to the coastal region to promote a favorable investment environment for transnational capital and rapid industrialization while leaving the inland region to serve in an auxiliary role through its supply of raw materials and labor.

This article argues that the missing component to the story of Chinese capitalist development has been so-called logistical fixes, which have bolstered the spatial division of labor between the coastal and inland regions. Logistical fixes denote transformations in the structure of logistical markets and infrastructure as a remedy to processes of under- and over-accumulation of capital (Danyluk 2018). The Chinese state has implemented such logistical fixes through targeted infrastructure-led development plans, which secured the logistical integration of the coastal and inland regions within global and regional production networks, respectively. Based on its logistics integration, the coastal region consolidated its global competitiveness. In essence, logistics and infrastructure-led development has represented an integral and enduring feature of the successful integration of Chinese capitalism with global production, circulation, and consumption processes (Schindler and Kanai 2021).

We examine the formation of these logistical fixes through a comparative-historical study, distinguishing between two developmental paradigms. First, the initial developmental paradigm was based on manufacturing-led development and export-oriented industrialization under the Open Door Policy (1978-2013). Second, the current developmental paradigm has been premised on post-industrial development and a rebalanced focus between exports and domestic consumption under the New Normal (2014-2021). These shifts in developmental paradigms are foregrounded by changing central-local relations within the Chinese political economy, which have been necessitated by crises of capital accumulation that have led to a new spatial fix and a spatial division of labor. We posit that the new spatial fix and spatial division of labor have functionally required a parallel reconfiguration of logistical fixes and an accompanying *spatial division of logistics integration*.

We examine these two periods through the lens of two analytical foci. During the Open Door Policy, the logistical fix was centered around the coastal region as a global export platform, as the developmental paradigm was focused on developing external infrastructural connectivity to buttress its export-led model. Inland regional corridors such as the Yangtze River Delta and the Pearl River Delta were established to facilitate

the supply and distribution of raw and intermediary inputs to the assembly processes on the coast. In parallel, the coastal region formed infrastructural linkages with global production networks through large-scale port and shipping systems to facilitate exports. The central-local relations during the Open Door Policy have been characterized by a high degree of decentralization resulting in logistical overcapacity due to uncoordinated regional development, redressed by the subsequent shift towards the New Normal as a new developmental paradigm.

The transition towards the New Normal has ushered in a new logistical fix, assigning the inland region a twin role as a manufacturing center parallel to the coastal region and a distribution hub supporting domestic circulation and the global consumption of commodities. Furthermore, the New Normal has entailed a notable shift in central-local relations due to the recentralization of power under the Xi Jinping administration to overcome the structural challenges inherited from the Open Door Policy (Jing Zhang and Chen 2017). As the coastal region is undergoing a process of industrial upgrading and innovation-driven development, the inland region is, in parallel, undergoing a renewed phase of industrialization. The new accompanying logistical fix has been shaped by the Dual Circulation policy (*guonei guoji shuang xunhuan*), resulting in a new spatial division of labor premised on strengthening China's system of domestic circulation and shift towards consumption-based growth (Liu and Ouyang 2020). The intensified focus on logistical and infrastructural connectivity reflects the growing centrality of the logistics industry, as demonstrated by China's grand visions for the global and regional economy through the Belt and Road Initiative (BRI) and the accompanying 'double opening' strategy, geared towards transforming the inland region into a logistical hub connected to the coastal region (internal opening) and neighboring regions in Asia (external opening).

The remaining paper proceeds as follows. The following section reviews the extant literature on China's coastal-inland gap and how it has resulted from spatial planning and governance dynamics – where logistics and infrastructural development form an essential part – foregrounding the necessity of continuously rebalancing the Chinese economy. The third section theoretically outlines the (capitalist) state's role in producing state spaces and forming logistical fixes, which has formed an integral albeit contradictory part of China's developmental and policy paradigms in its attempt to rebalance. The fourth section proceeds with the historical-comparative study, which is

partitioned into two periodizations: (a) the initial manufacturing-led and export-driven phase (1978-2013) and (b) the New Normal and post-industrial phase (2014-2021). The final section offers concluding remarks and problematizes the broader theoretical research program on logistical geography.

The coastal-inland gap and the challenges to spatial planning and governance

Spatial planning and governance have constituted “recursive spatial tool[s]” (Lim 2014, 242) harnessed as part of China’s developmental paradigm. Policies directed at molding Chinese spaces of capital accumulation have supported its rapid economic ascendance, while simultaneously harboring contradictory tendencies threatening its political and economic stability. Its exceptional rise during the Open Door Policy as the leading destination for global outsourcing of assembly-oriented manufacturing did not evolve evenly but was instead characterized by a coastal-inland gap. Based on a ladder-step transition theory (tidu tuiyi lilun), the central government promoted the selective development of the coastal region as part of the so-called Coastal Development Strategy in 1988, which was chosen to ‘get rich first’ as part of its gradualist strategy for development (Fan 1997). The coastal region was transformed into an attractive destination for foreign investments by forming special economic zones (SEZs), which extended foreign enterprises’ investor privileges such as tax rebates, access to land and infrastructure, and favorable import-export policies (Zeng 2010).

China’s developmental paradigm during the Open Door Policy was buttressed by a spatial division of labor between the coastal and inland regions that entailed massive investments into the functional specialization (Massey 1995) of (a) the coastal region in assembly-oriented manufacturing, and (b) the inland region on its auxiliary role through the provision of raw materials, intermediary inputs, and heavy machinery funneled primarily through state-owned enterprises (Ang 2016). A set of preferential policies were designed to facilitate this spatial division of labor, such as by channeling migrant workers from the inland to the coast by way of the household registration (hukou) system (Young 2013) and pricing primary goods (e.g., agricultural goods, raw materials) at a state-mandated lower price through the so-called ‘scissors gap’ (jiandaocha), which buttressed the global competitiveness of the coastal region (Fan 1997).

However, an underexamined aspect of China's developmental paradigm is the role of logistics and infrastructure in buttressing the spatial division of labor between the coastal and inland regions, which has customarily been construed as a derivative feature of its manufacturing-led and export-oriented developmental paradigm. This assumption belies the complex entanglements between China's infrastructural sector and developmental paradigm, which this article seeks to challenge. During the Open Door Policy, a massive port system that could handle the rapid turnover rate of global exports was rapidly developed along the Chinese coastline to support the role of the coastal region as an export platform, securing China's external connectivity with global production networks (Lean, Huang, and Hong 2014). However, the rapid expansion of the port system in the coastal region was also fraught with crisis tendencies, notably from the build-up of a massive overcapacity in port infrastructure. Wang et al. (2020) tallied that one port of 10 million kilometer-tons capacity existed for every 50km of Chinese coastline, creating an environment of cut-throat competition that pushed the profitability of port operators down. Furthermore, the limited port integration between port clusters due to blind planning and improper port design exacerbated the problems with overaccumulation, further lowering the profit rates for port operators (Aritua et al. 2022).

Another puzzling developmental trend is that while the coastal region has been afflicted by overcapacity, as discussed above, the inland region has concomitantly suffered from an underdeveloped infrastructural network and weak internal connectivity (in terms of highways, waterways, and railways connecting it to the coastal region). While the CCP did not initially recognize this as a problem, a change in developmental agenda emerged towards the end of the Jiang Zemin administration. A sequence of spatial restructuring plans was initiated in 1999, targeting the western provinces (1999), central provinces (2003), and northeastern provinces (2004) for large-scale infrastructural development plans to improve the internal connectivity between the coastal and inland regions. A major feature of these spatial restructuring plans was the development of a multi-modal transport network to improve coastal-inland connectivity through the expansion of a comprehensive highway, waterway, and railway network (Ling Wang 2019).

Due to the mixed results of these spatial restructuring plans throughout the 2000s, further policy efforts to reform the logistical system have extended to the 2010s. In

anticipation of China's shift towards a new developmental paradigm under the New Normal, bolstered by Xi Jinping's administration. The Ministry of Transport issued the policy brief *Opinions of the Ministry of Transport on Deepening Comprehensive Transportation reform*, introducing a comprehensive policy agenda on the centrality of logistics under the New Normal and the need to create a modernized transportation governance system. Logistics and infrastructure have thus arguably both been a source of competitive advantage but also a source of enduring instability for the Chinese developmental paradigm under the Open Door Policy and the New Normal. In the following analysis, we seek to understand how these complex entanglements between the infrastructural sector, the coastal-inland spatial division of labor, and China's shifting developmental paradigms are connected. To this end, we introduce the concepts of *logistical fixes* and the *spatial division of logistics integration* as conceptual lenses to understand the structural impetuses that have shaped both the constructive and contradictory moments of China's logistics system.

Logistical fixes: the networked spaces of capital accumulation

The build-up of overcapacity in the logistical sector can be interpreted through the conceptual lens of an overaccumulation crisis, referring to a crisis of surplus of capital or labor that cannot be viably combined into locally profitable investments and consequently valorized (Harvey 1982). Harvey (2015) frames overaccumulation crises as the challenge of maintaining the continuous flow and integration of capital accumulation processes between production, circulation, and consumption. Due to the impulse of expansion and the continuity of flow as a condition for capital's existence, "capital must circulate continuously or die" (Harvey 2015, 73). The literature interprets the spatial restructuring plans initiated in the 2000s as attempted solutions to overaccumulation crises through the institutionalization of spatial fixes that temporarily 'fix' the problem of surplus capital by relocating the excess capacity to underdeveloped inland regions, which is expected to expand markets to increase effective demand (see also Hung 2008; X. Zhang 2017 for conceptualizations of spatial fixes in the Chinese context).

While the literature on spatial fixes has focused on the management of the overaccumulation crisis through the spatial integration of industrial development between the coastal and inland regions, a missing component of this analysis is how this integrated

circuit of capital has been buttressed by circulation processes that have linked the resource frontiers and production nodes through infrastructural networks and logistical modes of integration (Schindler and Kanai 2021). Danyluk (2018) introduces the concept of a logistical fix as a modality of spatial fix, which seeks to analytically recenter the importance of logistics and infrastructure-led development in facilitating the seamless integration between different moments of the capital accumulation process. To this end, logistics systems ensure that capitalist enterprises can source input factors and circulate finished commodities to end consumers through various logistical infrastructures such as transportation networks (roads, railways, waterways, ports), distribution centers, and storage facilities. The concept of logistical fixes analytically foregrounds how circulation processes mediate the profitability of capital, as the surplus value can be realized at different points of the circulation process and becomes distributed among different fractions of capital¹. In the next section, we expand upon how logistical fixes contribute to circulation processes and enhance the profitability and competitiveness of capital.

Instituting logistical fixes in China through the spatial division of logistics integration

The Chinese state creates and maintains a favorable environment in the local economy to attract global investments. From this vantage point, logistical fixes can be construed as targeted investments by state and private capital into infrastructural networks and logistical modes of integration to create seamless and integrated spaces of capital circulation, facilitating capital expansion, profitability, and preservation. Such logistical modes of integration manifest in the built infrastructural environments, such as urban ensembles, communication networks, transport connectivity (roads, ports, bridges, and railways), industrial zones, and logistical parks. The aim of logistical fixes, then, is for the state and capital to mold the locational geographies of capital accumulation to secure the “organizational coherence, functional coordination, and operational unity” (Brenner 2004, 88) between spatial planning and the accompanying developmental paradigm. Based on this state-capital nexus, a reciprocal relationship is thus formed between capital and the state as they coordinate where to target investments into infrastructure and logistical systems to mutually realize their interests to stimulate the conditions for profitable spaces of capital accumulation (van Apeldoorn, de Graaff, and Overbeek 2012).

Logistical fixes form the networked spaces of capital accumulation linking complex chains of internalized and externalized production processes through “planning, coordinating and controlling material, parts and finished goods from suppliers to the customer” (Stevens 1989, 3). Logistics matters for the valorization of commodities because the valorization process is practically interrupted whenever capital is in circulation. To this end, logistical processes realize their value by providing circulatory services (such as storage, customs clearance, transportation, packaging, cargo management, and tracking) to reduce circulation/transit time by efficiently coordinating supply and demand. Logistical overaccumulation crises are encountered by the state and capital as disruptions to circulation processes, leading to delayed supplies, higher circulation costs, and, ultimately, lower profitability.

Scholars in critical logistics and geography have, in this connection, showcased the ample roles states play in ensuring the continued reproduction of circulatory processes (Cowen 2014; Campling and Colas 2021). While exogenous shocks can often be resolved relatively fast, endogenous frictions and contradictions might gradually trigger a systematic logistical restructuring and the formation of new logistical fixes altogether and shifts in development paradigms. These systematic changes to the broader developmental paradigm, such as the shift in logistical requirements in favor of retail-consumer logistics under the New Normal, showcase how the Chinese state and capital have mobilized new logistical fixes by adapting, accelerating, expanding, and improving logistical processes to mend disruptions to circulatory processes.

To explore how logistical fixes can operate, we introduce the conceptual innovation of *spatial division of logistics integration*. This concept helps explain the competitiveness of Chinese circulatory processes by focusing on how different regions unevenly develop and integrate into global and regional production networks from a logistical perspective. By shedding light on how logistics development is organized and distributed across geographical regions based on their specific roles in global and regional production networks, the concept showcases how the state and capital can selectively develop the infrastructure of various regions based on their differential linkages to global and regional production networks and their respective logistical requirements in terms of logistical capabilities and infrastructural assets. By doing so, it is possible to leverage the interactive complementarity between regional economies with (relatively) limited but

specialized patterns of infrastructural development (Coe et al. 2004). The comparative advantages of each region can thus be collectively mobilized and coordinated to create absolute advantages for one region through the supportive function of the other. The interplay between absolute and comparative advantages within regional economies is achieved through targeted and selective transportation and logistics infrastructure development in the coastal and inland regions.

The contradictory and layered processes of spatial governance and logistical fixes

To understand the process through which logistical fixes are implemented in the Chinese context, it is necessary to understand China's system of spatial governance and the contradictory characteristics of spatial and, by extension, logistical fixes. Logistical fixes can be analyzed from a processual perspective as they are products of (a) tendentially unstable processes, and (b) fragmented policy-making processes.

First, logistical fixes can only temporarily defer or spatially displace the crisis tendencies of the capitalist mode of production by lowering costs, expanding markets, or increasing profitability. The stabilization of capital accumulation is thus always provisional and requires continuous re-stabilization that yields new contradictions that will, in turn, form the conditions under which future contradictions emerge (Jessop 2008). From this perspective, past rounds of logistical and infrastructural development form the inherited geographies upon which new logistical fixes must be built. The institutionalization of new logistical fixes thus needs to address inherited contradictions and the new functional requirements of the new developmental paradigm² through new layers of logistical development and restructuring.

Second, the Chinese state is constituted by a vast bureaucratic network of overlapping policy jurisdictions not monopolized by a single body of interests. The diversity of interests within Chinese government agencies has led to the apt description of China as a system of fragmented and regionally decentralized authoritarianism, from which emerges conflictual (vertical) central-local dynamics on the one hand, and (horizontal) inter-agency and inter-provincial competition on the other (Lieberthal and Oksenberg 1988; Landry 2008; Xu 2011). The central and provincial governments form the cornerstones of the central-local relations of the Chinese political economy, as they form a scalar division of labor whereby the central government issues the overarching

regulatory context and policy agenda (upward coordination) within the context of which local governments are encouraged to strategically experiment and maneuver with the policy implementation (downward implementation) in response to locationally specific conditions (X. Su 2012b).

Inter-scalar dynamics are also mirrored across the bureaucratic system, manifesting as (a) disjointed decision-making across bureaucratic agencies, and (b) inter-provincial competition centered around parochial interests. First, bureaucratic fragmentation can be observed in infrastructural development and logistical planning. Two different planning agencies devise long-term master plans and operate across China's five-tier administrative hierarchy: socioeconomic development plans in the form of Five-Year-Plans (FYP) authorized by the National Development and Reform Commission (NDRC) under the direct control of the State Council and its subsidiary agencies, and the Ministry of Transport (MOT) involved in managing China's transport and logistical geographies. Second, regional tensions arise between the parochial interests of provinces, specifically between the coastal and inland regions, over the spatial division of labour and logistics integration enforced by the central government and their distributive consequences.

A comparative-historical analysis of China's logistical fixes

The comparative-historical analysis examines the logistical fixes that have accompanied the changes in the spatial division of labor between the coastal and inland regions during the Open Door Policy and New Normal. The methodological choice of periodizing Chinese capitalism is informed by earlier calls for new perspectives on China's changing developmental trajectory (see Lu and Fan 2010), which has either been fragmented or failed to materialize into a systematic research agenda. These prescient discussions were furthermore supported by signs of economic decline in the aftermath of the global financial crisis in 2007, after which the developmental and policy paradigm predicated on export-oriented industrialization, labor-intensive industries, and a low-wage labor regime had notably started to show signs of exhaustion (Yu and Zhang 2015). Building on these initial premises, the following periodization distinguishes between two periods (see Table 1): the Open Door Policy (1978-2013) and the New Normal (2014-2021).

Table 1. Summary of the Open Door Policy and New Normal periods

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The primary goal of periodizing Chinese capitalism into two phases is, first, to identify the relatively durable logistical fixes and their accompanying spatial division of logistics integration that underpins each of the two periods. By tracing the historical development between the Open Door Policy and the New Normal, this article periodizes moments of capitalist development in the Chinese political economy and the layered development through cumulative rounds of investments of logistical fixes. Second, we contextualize these developments with the broader structural shifts in Chinese central-local relations as an explanatory lens to understand the causes and mitigation of the logistical overaccumulation crisis. To this end, the analysis draws primarily upon documents in terms of spatial and territorial development plans, Five-Year Plans (FYPs), and policy memorandums from the relevant state agencies mentioned in the preceding section (see Section 3.2) and quantitative data on the logistical investments and flows between China's coastal and inland regions from 1978 to 2021.

The logistical fix during China's Open Door Policy (1978-2013)

The logistical fix during the Open Door Policy and its accompanying spatial division of logistics integration between the coastal and inland regions has been shaped by two decisive moments. The initial integration process, accompanied by the introduction of special economic zones (SEZs) in the 1980s, was a catalyst for the development of external linkages of the coastal region to the global economy. The second moment in the late 1990s and onwards was the gradual upgrade of the coastal region into a full-package model that sought to increase the domestic content of its exported commodities. To this end, the coastal region started to form logistical linkages with the inland region, from which it would source raw materials and other intermediary inputs. A logistical fix extensively supported these processes to enhance the circulation of commodities in China to create the 'factory of the world' (Chan 2012). We unpack the implications of this articulation of logistical and infrastructural development by examining the two dimensions of the spatial division of logistics integration between the coastal and inland regions: (1) the external circulation between the coastal region and the global economy, and (2) the domestic circulation and logistics integration between the coast and inland regions.

The coastal region as an export platform and logistical hub

During its initial integration phase with global production networks in the 1980s, China was embedded in a captive relationship characterized by “the mere assembly of imported inputs, typically in export-processing zones” (Gereffi, Humphrey, and Sturgeon 2005, 91). It required China to import primary inputs such as raw and semi-finished materials to facilitate the assembly and production of intermediate and final products for exports. For this reason, its coastal competitiveness was conditional upon its connectivity with global suppliers, which rendered its coastal infrastructure and logistical performance a key success criterion for attracting global lead firms (Cattaneo et al. 2013). This initial priority was captured in the 11th FYP (1981-1985), which focused on “placing both ends outside” (*liangtou zaiwai*), rendering the coastal region a self-sufficient modular insertion into the global economy (Yang 1991).

A primary barrier to securing the integration of the coastal region was its weakly developed logistical infrastructure, which posed high costs in terms of transit times and other circulation-related costs that were temporarily offset by low labor costs. In short, providing adequate infrastructure meeting the functional requirements of global production networks was “a necessary precondition for regional economic activities” (Shen 2002, 111). Consequently, the Chinese state opted to implement SEZs, which would serve as the logistical mode of integration to secure the modular insertion of the coastal region. Upon introducing the first SEZs in Zhuhai, Shenzhen, Xiamen, and Shantou in 1980, they accounted for nearly 60% of total foreign direct investment in China (Wong 1987). Over the next 20 years, until the global financial crisis in 2007, the initial five SEZs would employ 2% of China’s labor force while accounting for 22% of its total merchandise exports (Zeng 2010).

SEZs functioned as an integral component of the logistical fix premised on the targeted development of critical transport infrastructure in the coastal regions to facilitate connectivity with global export markets. SEZs entailed bonded zones where regulation was minimized, and political oversight was targeted at expediting export processes, thereby ensuring that the flow of commodities was made less costly by promoting the rapid and efficient turnover of raw commodities and intermediary inputs into products and back to consuming countries (Cowen 2010). High logistical efficiency was crucial for the integration between global markets and the coastal region because its

competitiveness as an export-processing zone was contingent on its connectivity, turnover rate, delivery time, and transportation cost, all of which were important in managing the time and cost sensitivity of global production networks. In response to these functional requirements, the Chinese central government regarded transport infrastructures as a major policy priority, which was emphasized successively in its FYPs as part of its broader developmental paradigm to mold the logistical geography around the coastal region.

In the 1990s, investments in port infrastructure were primarily covered by state fixed-assets investments in transportation and telecommunications, which reached as high as 30% in 1998 (Démurger et al. 2002). From the government's perspective, the central and coastal provincial governments proactively made targeted investments in the coastal region (Jun Zhang et al. 2007). However, port development led strictly by the central government could not keep up with the growth in Chinese trade (Heine 1989). The accumulation of physical infrastructure in ports, processing plants, storage facilities, and distribution centers was gradually eclipsed by joint investments by the Chinese state and foreign capital. Between 1979-1990, the coastal region received 91% of all foreign direct investments (Enright 2016), contributing to initial rounds of investments jointly with the Chinese state to strengthen the port infrastructure.

During the earlier phases of the Open Door Policy, a series of policies related to shipping infrastructure were focused on the decentralization and liberalization of port management to aid SEZ formation. These reforms took the form of a dual-management system, bringing municipal governments into playing a central role in port development (Cullinane and Wang 2006). Provincial and city authorities provided land and tax advantages, inciting intra-regional competition, while foreign firms and cargo owners operated and built facilities around ports under tight restrictions. Joining the WTO ignited a new wave of shipping reforms from 2002 to 2011. Port governance was further decentralized following the introduction of the Port Law of 2004, thereby limiting government intervention by splitting port governance into regulatory and commercial activities.

Consequently, the commercial arms of port authorities were motivated to link with foreign firms that were leaders in the port sector (Aritua et al. 2022), exemplified by corporations like Hutchinson Whampoa, PSA, and Mærsk. These companies grew in

presence in China and ushered in equipment, managerial and operational skills, and even clients. Joint ventures were formed between the foreign corporations, port enterprises, and the coastal provinces, whose increased fiscal capacity resulting from their booming economy gave them the means to make further investments into local transport investments (Jun Zhang et al. 2007)³.

The culmination of these multiple waves of port reform and development is reflected in China's rapid integration with the world's container ports and sea routes post-2001 after their admission to the WTO. Complementing the rise of joint ventures, the central government also outlined in the 10th FYP (2001-2005) a plan to build "135 deep-water berths and reconstruct 45 existing ones for China's seaports [to] increase port handling capacity by 20 million tons and the container handling capacity by 16.5 million TEUs" (Goh and Ling 2003, 901)⁴. Consequently, seaport investments grew between 15.7% to 23.7% during 2000-2010, resulting in a massive port capacity expansion that handled 11 billion tons of cargo by the end of the Open Door Policy (Song and van Geenhuizen 2014a). In sum, the decentralized port governance created a dynamic interplay between the state and private capital, whose coordinated investments and targeted legal reforms produced the ripe conditions for the coastal infrastructure system to rapidly expand. The successful spatial division of logistics integration anchored in the coastal region was reflected in the port statistics, as China has since the early 2010s had seven out of ten of the largest ports in the world measured by container cargo throughput (Alphaliner 2021).

The coastal-inland logistics integration and processes of domestic circulation

Efforts to enhance the circulatory processes of Chinese capitalism reached a zenith in March 2001, where the State Economic and Trade Commission issued the policy plan "Several Opinions on Accelerating the Development of Modern Logistics" (State Economic and Trade Commission 2001). The heightened focus on logistical development reflected China's transition from a captive model of export processing "to a more domestically integrated and higher-value-added form of exporting broadly known in the industry as full-package supply" (Gereffi, Humphrey, and Sturgeon 2005, 91). For this reason, the efficiency of domestic logistical linkages – in the form of efficient transportation and access to locally sourced inputs – became crucial for securing China's

deepened integration with the global economy. China turned to the inland region to reduce its reliance on global export markets for intermediate and raw materials to locally source them instead.

More than 20 coastal and inland provinces and municipalities issued local development plans for expanding their logistics systems to facilitate the implementation of this logistical fix, catalyzing a logistical boom and infrastructural consolidation in the 2000s (K. Li 2014). To strengthen domestic infrastructural linkages, highways and railways became policy priorities and recipients of massive rounds of targeted fixed-assets investments by the state as part of its intermodal transport network (Shen 2002). The spatial division of logistics integration linked resource frontiers between the coastal and inland functional regional territories by introducing two regional development plans: Yangtze River Delta (YRD) and Pearl River Delta (PRD). Each regional development plan targeted a core metropolitan region, namely Guangdong (YRD) and Shanghai (PRD) (Y. Li and Wu 2013). The PRD and YRD were respectively introduced in 2004 and 2005, both of which involved the visions of the provincial and central governments in promoting regional connectivity between coastal and inland provinces.

The YRD and PRD suffered from severely underdeveloped infrastructure as the regions were not prioritized for development during the pre-reform period (Shen 2002). For example, the PRD only had two railway sections linking Guangzhou to Beijing and Kowloon in Hong Kong, and highways were interrupted by crosscutting rivers that required ferry transportation (Shen 2002). These barriers to domestic circulation imposed prohibitive costs on transportation. From this perspective, the two regional corridors offered the “institutional solution to overcoming the hurdles of capital accumulation” (Yeh and Xu 2010, 22) by expanding and upgrading the inland region and its potential for logistics integration. Concretely, this institutional solution implied the implementation of a comprehensive network of transport corridors crosscutting the Chinese continent from East-to-West (PRD) and South-to-North (YRD).

The State Council (2005) approved 2004 the National Trunk Highway System, which outlined a comprehensive plan to build an excess of 85,000 km of highway network over the next three decades. The target goals were already exceeded eight years later, catalyzed by the decentralization and liberalization of the highway system similar to the port system. As a result, highway investments became dominated by commercial entities

that sank significant investments into road infrastructure with the expectation of a high return based on projected toll revenues (Aritua et al. 2022). In parallel, the State Council also issued a policy for the development of a comprehensive railway system based on the Mid- and Long-Term Railway Network Plan (State Economic and Trade Commission 2001). This plan aimed to increase the total length of railways by one-third to 100,000km. While most investments in railway infrastructure had prior to 1990 been undertaken by the central government, joint ventures based on commercial incentives gradually became the norm after the mid-1990s. Put into perspective, joint ventures in railways only accounted for 4.4% of total network length in 1995 but culminated at 39.6% by 2013 (Aritua et al. 2022).

Throughout the 2000s, investments into inland infrastructure and logistical capacity were significantly improved to strengthen the material flow of parts, energy sources, and raw inputs (see Figure 1). On the one hand, raw material inputs were “located mainly in the west while industrial centers [were] based on the east coast” (Démurger et al. 2002, 103). Therefore, their primary mode of transportation was railway freight across long distances, in high volumes, and at low frequencies. On the other hand, the distribution of intermediary inputs and sourcing of turnkey inputs between the coastal and inland regions involved a more complex networked circulation process, which required coordination between distribution centers, “characterized by low volume and high frequency deliveries” (Coe 2014) primarily transported through road freight transportation. Consequently, while train freight volume had increased by 100% between 2000-2010, road freight soared by 700% during the same period. Although national coastal shipping increased rapidly at the beginning of the 2000s following the WTO admission, inland (road, rail, and inland waterways) freight gradually eclipsed its coastal counterparts in the latter half of the 2000s as the regional connectivity of PRD and YRD regional corridors was enhanced.

Figure 1. Freight transport growth (1978-2013)

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The limitations and contradictions of China's logistical fix during the Open Door Policy

The logistical fix between the coastal and inland regions enhanced the domestic circulation by linking the coastal-inland resource frontiers to an expanded intermodal transportation network. Towards the end of its industrial phase in 2013, upwards of 70% and 95% of input factors of foreign and domestic manufacturing firms were sourced locally (World Bank 2013). The logistical fix was premised on a spatial division of logistics integration that promoted the centrality of the coastal region as a logistical nodal point in transport networks and the subordination of the inland regional node. Consequently, the inland region had practically “no export and import logistics function for the international marketplace” (Wei and Sheng 2018, 54) as it had to channel them through the logistical channels of the coastal region.

However, while the unequal logistical development between the coastal and inland regions succeeded in rapidly integrating China with global production networks, it also exhibited multiple fault lines. Throughout the Open Door Policy, China's logistical system had been plagued by inefficiency and overaccumulation, most clearly reflected in its total logistics costs, which reached nearly 20% of its GDP by 2011 (Jiang 2014), exceeding the global average of 10% (OECD 2022). These fault lines resulted from the conjunctural moment between China's central-local relations and logistical fix during the Open Door Policy, which had taken its distinctive shape as a joint crisis of (a) logistical overaccumulation in coastal port infrastructure, and (b) underdevelopment in inland highway and railway infrastructure resulting in weak organic connections with the coastal region.

The immediate consequence of the targeted logistical and industrial development of the coastal region was that it stimulated foreign direct investments that would otherwise not be profitable, which consequently triggered an ‘amplification effect’ through the scale of logistical activity. Due to the decentralization of port governance, local governments were allowed to independently use their fiscal resources to invest directly in port development (Cullinane and Wang 2006)⁵. The growing provincial autonomy in port decision-making impelled provincial governments to continuously invest in port infrastructure, as studies have shown that port development contributed substantially to provincial economic performance (Wu et al. 2016). Due to the positive

feedback mechanism between infrastructure development, economic growth, and local fiscal revenue, local governments in the coastal region would restrict their investments to localized infrastructure and logistics. However, as ports rapidly expanded, inefficiencies in the form of excess capacity became an issue in regions where industrial development started slowing down.

The structural causes of the logistical overaccumulation of coastal port infrastructure can be attributed to China's central-local relations, which have fostered a system of local developmentalism and protectionism (F. Su and Tao 2017). From the perspective of the (coastal) local governments, the system of decentralized port governance resulted in a proliferation of joint ventures that allowed Chinese port operators to close the infrastructural gap with the support of foreign firms. Local politicians were incentivized to promote growth through investments in the built environment, such as infrastructure, as their political careers depended on the performance of their local jurisdictions, such as local economic growth and unemployment rate (Landry, 2008; Xu, 2011). Local politicians thus prioritized local investment to favor localized economic stimulus rather than the optimal allocation of capital to neighboring provinces that would not materialize as local benefits (Keister and Lu 2001). These incentive structures thereby created a supportive investment environment as government guarantees via the state-owned Chinese banking system allowed port operators to finance port expansion at a low cost. Consequently, local governments, capital, and port operators viewed the rapid expansion of port capacity in neighboring regions as growing levels of competition in response to which they had to continuously make further investments to attract trade flows to their local ports.

In contrast to the local governments, the central government adopted a system-level perspective, which discerned a potentially broader overaccumulation crisis due to these combined factors of misaligned incentives. A major challenge related to the overaccumulation in port capacity was the emergence of inter-provincial rivalries resulting from the central-local relations during the Open Door Policy. In effect, these inter-provincial rivalries yielded inefficient logistical planning and investments, causing a dispersion in the external connectivity of Chinese ports, as ports that were in geographical proximity would compete against each other for cargo (C. Wang and Ducruet 2014). For example, due to the excessive local competition between North and

South China, the two coastal areas were barely connected (measured in flow linkages) prior to the 2000s, leading to the parallel emergence of polarizing regional hubs around Tianjin, Shanghai, Qingdao, and Xiamen (Song and van Geenhuizen 2014b).

More significantly, the overaccumulation of infrastructure in the coastal region created a source of economic and political destabilization as the incapacity to absorb the fixed capital investments would potentially lead to a devaluation of local assets and a potential destabilization of local economies (Harvey 2015). The massive investments into coastal infrastructure also posed the risk of contagion, as local governments financed them through non-local capital. A system-wide default on port operators would thus pose systemic risks to the entire economy, potentially debilitating China's competitiveness as an export platform. As ports rapidly expanded, inefficiencies started arising, and excess capacity became an issue in some regions where industrial development started slowing down.

Conjoined with the challenges of logistical overaccumulation was the issue of logistical underdevelopment in the inland region, which was a direct corollary of the targeted development of the coastal region as part of the spatial divisions of logistics integration. Following two decades of policy prioritization of the coastal region, the central government had to appease the inland regional governments that had long awaited the ladder-step transition to reach them (Golley 2007). Consequently, to address the logistical underdevelopment of the inland region, the central government initiated spatial rebalancing policies in the 2000s, which were intended to mitigate the destabilizing effects of this spatial division of labor between the coast and inland regions. Between 2000 and 2004, fiscal expenditure on infrastructure investments and fiscal transfers to the inland regions moved between 54% and 69% of total national expenditure, showing a solid redistributive impetus favoring the inland (Grewal and Ahmed, 2011).

However, these stimulus packages and their plans to redistribute infrastructural development to the inland region must also be problematized. Studies have shown that road investments have translated into significant productivity gains for the coastal region but have been nearly zero for the inland region at the beginning of the 2000s (Z. Li, Wu, and Chen 2017). These observations confirm the success of the spatial division of logistics integration, which has been centered around advancing the competitiveness of the coastal region as an export platform rather than fully integrating the inland region. It

also demonstrates the so-called ‘empty roads’ hypothesis, which suggests that the new roads built have not been organically integrated with China’s logistical system and have thus been underutilized. The expansion of coastal infrastructure thereby yielded “limited spillover effects from growth centers in the coastal areas to inland regions” throughout the 2000s (Hao and Wei 2010, 183–84).

Conclusive observations on these deficiencies of coastal-inland connectivity were issued by the MOT, which would, on multiple occasions throughout the 2000s, comment with great awareness that there was a “lack of organic connections” between the coastal and inland regions and the “development of multi-modal transportation networks was deficient” (Ministry of Transport 2002; 2005; 2007 authors’ translation) despite the massive investments into transportation networks. In conclusion, the regional advantages realized by the coastal region from its interactive complementarity with the inland region have thus only been one-sided, as the former region was only developed so far as to functionally support its integration and supply of raw materials and intermediary inputs with the latter. As the spatial division of logistics integration primarily served the regional competitiveness of the coast, it did not yield any organic connections with the inland region that promoted localized growth.

In consequence, these spatial rebalancing policies would only partially redress the logistical overaccumulation crisis centered around the coastal region and the logistical underdevelopment of the inland region. The spatial restructuring plans were, in effect, stimulus packages that increased effective demand, such that the excess capital could be absorbed in a round of infrastructural investments and the build-up of the inland industrial base (Tian 2004). However, the stimulus package did not resolve the structural imbalances linked to the spatial division of labor and logistics integration between the coastal and inland regions. The investments into infrastructural development would, due to the continuous misallocation of capital engendered by local protectionism, only further balloon excess capacity in the coastal region as infrastructural investments in the inland region would primarily enhance the connectivity of the coastal region through its spillover effects (Z. Li, Wu, and Chen 2017). The following sections will showcase further attempts by the Chinese state to remedy this situation as it attempts to shift to a new developmental paradigm.

The new logistical fix under the New Normal (2014- 2021)

Following the 2008 global financial crisis, the CCP sought to rebalance the structural foundations of its developmental paradigm by reducing its reliance on export markets for economic growth by increasing domestic demand. Xi Jinping's administration promulgated the New Normal in response to multiple consecutive years of declining growth following the global financial crisis (Jing Zhang and Chen 2017). In recognition of the need to rebalance its growth engines and change its developmental priorities (Rolf 2021), the CCP initiated the managed transition toward the so-called New Normal. As a newly emerging developmental paradigm, the New Normal has aimed to reconfigure the spatial division of labor between the coastal and inland regions and implement a new spatial fix, buttressed by two major policy agendas.

The Made in China 2025 (MIC2025) national strategy targeted the coastal region for industrial upgrading centered around service-based and innovation-driven development (Ma et al. 2018). The central government started redirecting investments as part of the 12th FYP (2011-2015) to the inland region to relocate manufacturing activities that had become too expensive on the coast toward the less developed inland region (Chang et al. 2013). The effects of this policy can be seen in the increasing pushback against low-end manufacturers in coastal provinces, leading producers to relocate to inland provinces such as Anhui, Jiangxi, Hubei, Hunan, Henan, and other underdeveloped inland regions. The Dual Circulation policy, officially launched in 2020, codified an economic diversification strategy aimed at lowering the overdependence on global export markets and, in combination with the MIC2025, promoting the localization of production and strengthening domestic consumption. A significant aspect of this overdependence is exemplified by the global backlash against Chinese high-tech companies, such as the US ban on companies selling high-tech equipment to Chinese company ZTE Corp, which prompted the push for self-reliance in producing semiconductors.

In combination, the MIC2025 and Dual Circulation policy has enforced a new spatial division of labor based on the functional specialization of the coastal region in high value-added activities (finance, design, and research and development) while transforming the inland region into a new hub of manufacturing (He and Wang 2012). While the MIC2025 initially designated the inland region as a manufacturing center, the Dual Circulation policy attempts to anchor its role as a logistical hub. The logistical

prioritization of the inland region dovetailed with the policy agenda of the 12th FYP (2011-2015), which called for resolving the logistical overaccumulation crisis in the coastal region and crises of logistical underdevelopment in the inland region inherited from its prior logistical fix. The inland region would thus become the center for logistical systems and services, facilitating the manufacturing and internal (domestic) and external (extra-regional and global) circulation of commodities. Consequently, the New Normal *qua* developmental paradigm has notably entailed (a) a reshuffling of central-local relations in favor of coordinated regional development and master plans, and (b) the consolidation of a new logistical fix and spatial division of logistics integration that attempts to anchor the inland region as a manufacturing center and logistical hub.

First, in the Chinese government's view, the solution to the contradictions and frictions engendered by decentralized governance has been a stronger emphasis on coordinated, state-driven regional development that replaces its long series of single mode of transportation plans (intermodalism) with coordinated planning based on multi-modal transportation plans (Ministry of Transport 2018). To this end, a defining feature of the Xi Jinping administration has been a growing focus on master plans, exemplified by the 13th FYP (2016-2020) on devising and implementing a "master strategy for regional development" (NDRC 2016) ⁶. Concretely, these initiatives have translated into substantive reforms in transport governance based on a series of market-oriented reforms to redress misaligned incentives created by government investment guarantees, thereby strengthening the dynamics of market efficiency of infrastructure investments. These reforms have been noticeable in port governance, as the central government has made significant efforts "to increase coordination and cooperation among ports" through the formation of port groups that are "warned against the unnecessary duplication of port facilities" (Aritua et al. 2022, 31).

Second, the logistical overaccumulation in the coastal region has been mitigated by steering the logistical investments and competition away from the oversaturated coastal region. Instead, the inland region has become a secondary logistical hub, realized through a so-called double opening strategy that promotes the deepened integration of the inland region with the coastal region (internal opening) and its neighboring Asian cross-border regions (external opening) through institutional and infrastructural linkages (Summers 2013). The following section foregrounds the internal and external dimensions

of infrastructural connectivity to understand the logistical fix under the New Normal and its accompanying spatial division of logistics integration. First, we examine the internal opening between the coastal and inland regions through a closer integration between the coastal maritime infrastructure with inland transportation such as inland waterways, highways, railways, and airports, all of which feed into the heightened importance of domestic circulation and retail-consumer logistics centered around the inland region. Second, we pivot our analytical focus to the external opening between the inland and the rest of Asia through the Belt and Road Initiative, which has promoted extra-regional forms of integration between the inland region and westward with the rest of the Asian continent, illustrated through the China-Indochina Peninsula Economic Corridor.

The inland region as a logistical hub facilitating domestic circulation

In the post-financial crisis stimulus plan, the CCP issued massive infrastructure development plans equivalent to RMB1.5 trillion to enhance logistical efficiency and target the development of existing logistics resources while supporting the linking-up of fragmented logistics infrastructures (Y. Qin 2016). To this end, the new logistical fix centered around the inland region has foregrounded new modes of logistics integration to facilitate domestic circulation. These policy measures intend to redraw the infrastructural topography of Chinese state spaces to support China's new developmental paradigm and the parallel growth of circulation capital. Whereas the previous focus was primarily on expanding coastal seaports and secondarily on inland infrastructure to support the provision of raw materials and intermediate inputs as an auxiliary to the coastal regions, the new spatial division of logistics centers the inland region as a manufacturing and logistical hub with the support of public and private logistics actors that have invested heavily in inland waterways and retail logistics. Consequently, it is more likely to form organic transport connections that mitigate the prior risks of asymmetrical development that primarily favored the coastal region.

The new spatial division of logistics integration has changed the function of logistics and transportation toward domestic circulation and consumption, altering the modalities and patterns of logistical flows (Jie and Lu 2010). The central government spearheaded this transition by introducing the National Comprehensive Three-Dimensional Transportation Network Planning Outline as part of the 13th FYP (2016-

2020) to modernize and renew logistical infrastructure along the YRD and PRD regional corridors. To meet inland logistics demands, container transportation by inland waterway has proliferated since the financial crisis, reaching a year-on-year average of 11.1% between 2007 and 2020 (OECD 2022). The rapid growth is exemplified by the Shanghai International Port Group (SIPG) investments in the YRD, with twelve logistics infrastructure and transport firm acquisitions in Chongqing, Suzhou, Wuhu, Wuhan, Yibin, and other cities as of 2020 to expand handling, storage, and transportation capacity inland in China (Notteboom, Yang, and Xu 2020)⁷.

Alongside the 13th FYP, the central government also issued the Plan of Comprehensive and Vertical Transport Corridor on the Yangtze River Economic Belt, emphasizing the utilization of inland waterways as transport nodes and international logistics channels, which will form a transport network for major riparian cities surrounding the river. The plan noticeably emphasizes the need to “uncover the potential of domestic demand in the hinterland along the upper reaches of Yangtze River, [and] extend the space of economic growth from the coastal areas to the inland areas along the Yangtze River” (Ling Wang 2019, 59). Consequently, these policy visions translate into the large-scale plan of building another 320 inland berths and improving the inland waterways with a 4500-kilometer extension, thereby increasing the freight volume of the YRD trunk line by 300 million tons (Junye Zhang et al. 2019). By enhancing the connectivity between the highly developed coastal port infrastructure and inland waterways and dry ports⁸ (see Figure 2 below), new logistical flows and modes of integration are created to lower the cost of trade with the inland region.

Figure 2. Dry ports in China (2022)

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In this emerging context, private capital has assumed a pioneering role in developing multi-modal transport networks for retail-consumer logistics (Ministry of Transport 2015), accommodating the rise of a consumption-based economy and the shift towards domestic circulation. Most notably, China’s booming e-commerce industry based on web retailers such as Taobao, Tmall, and 360buy.com have amounted to a total of RMB13.1 trillion in 2021 (Statista 2023), which has displayed “new forms of spatial organization, which are different from those of traditional industries” (Lu and Fan 2010, 88). In effect, commodities in retail-consumer logistics are not quickly processed for exports but require

a flexible storage capacity to handle high-frequency, low-volume transactions with a rapid turnover. Consequently, highways have been the preferred mode of logistics integration between e-commerce platforms and end-consumers, for which reason road infrastructure investment has grown by a year-on-year average of 20% between 2008-2018 (OECD 2022). In comparison, railway infrastructure investments only increased by a year-on-year average of 7.9% during the same period and even declined for the first time in 20 years (OECD 2022)⁹.

Privately-owned third-party logistical giants and online marketplaces such as Alibaba have furthermore reshaped Chinese logistical networks by building their own distribution networks and bringing in new logistics developments anchored in new technologies such as blockchain-enabled trade, as exemplified by the project between Alibaba and COSCO shipping (Paris 2020). By building so-called networked factories, Alibaba can match any need for producing goods directly with factories around China and provide all the logistical support to flexibly meet the demand for new goods (Butollo and Schneidmesser 2021). These emerging logistical patterns centered around retail-consumer logistics are also reflected in the sharpened focus on logistics parks inwards, for which reason China is planning to build 150 logistics hubs by 2025, many of which will be situated in the inland region in the form of inland ports, cargo ports, and airports (National Development and Reform Commission 2018). The proliferation of such logistical parks signals that logistics has become an integral service industry in supporting the logistical fix centered around the inland region.

Logistical parks have functioned as favored modes of logistics integration, characterized by the spatial concentration of logistical establishments such as distribution centers, warehouses, and delivery depots. Logistical parks have thus functioned as spatial planning tools to diminish the potential logistical frictions resulting from the logistical underdevelopment in the inland region through its functional specialization and targeted development of locational assets akin to the logic of SEZs (Guoqi Li et al. 2020). China's biggest warehouses have relocated to inland provinces such as Zhangzhou of Henan, Lanzhou of Gansu, and Chongqing (F. Qin 2014), gradually becoming well-connected due to their strong integration with highways and rail networks. Many of these developments have been enabled by the large e-commerce firms taking center stage in logistics development. For example, JD Logistics started focusing on the platform's

delivery needs in China but now has over 900 warehouses in China and moves cargo for third parties, showcasing the growth of the third-party logistics industry in China, following similar trends globally (McMorrow 2021). In recognition of the growth of this third-party logistics industry, a new state-owned enterprise giant, China Logistics Group, has been created for the government to intervene in the market (Jia, Bai, and Han 2021).

The inland region, the Belt and Road Initiative, and their facilitation of external circulation

Parallel to the logistical opening between the coastal and inland regions, the CCP has also directed investments to further improve external connectivity, particularly in the inland region, as part of its double opening strategy. To this end, the logistical fix under the New Normal has entailed the outward development toward the Southeast Asian region for the emerging inland manufacturing center to fully connect with regional logistical hubs and corridors. These corridor policies are chiefly about integrating the regional economies of the inland provinces into a well-functioning and connected Asian regional economy through the creation of two-way transport networks. The emphasis on a two-way transport network builds upon the existing policy priorities in the BRI, which was formally codified as a policy plan by the NDRC in 2015 to diversify inland regional connectivity to the relevant cross-border export markets neighboring the inland region (Chen 2023). The six constituent corridors of the BRI all pivot around the inland region but constitute a diversified, multi-corridor transportation network that extends into Asian neighboring countries. These investments in distributional capabilities go beyond the national territorial borders because the international development of logistical spaces is also crucial for the continued growth of the Chinese political economy.

Akin to other large-scale infrastructural plans promoted under the New Normal, the BRI has also been designed according to the logic of coordinated and centralized planning. Each constituent corridor has been designated a strategic role under the moniker of a bridgehead based on a coordinated division of labor between the provinces (Chen 2023). As bridgeheads, local governments maintain the strategic discretion to adjust policies according to their local contexts but must play according to the broad visions of the master plan. For example, the China-Indochina Peninsula Economic Corridor (CICPEC), which builds upon the Greater Mekong Subregion project, has rapidly

developed multiple cross-border transport corridors that link Yunnan with Laos, Vietnam, and Cambodia. These patterns of cross-border connectivity form the basis upon which inland provinces such as Yunnan and Guangxi have pivoted their provincial economies towards the Southeast Asian region in areas such as hydropower, tourism, environment, and agriculture (X. Su 2012a).

However, introducing the CICPEC has also been fraught with scalar conflicts as Yunnan and Guangxi have issued competing regional development plans to promote their parochial interests by centering cross-border activities around their respective provinces. Yunnan introduced the Grand Route Way, proposing a network of railways and highways that linked the province to Vietnam (M. Li 2014). In parallel, Guangxi initiated Pan-Beibu Gulf and the M-Strategy in 2006, which catalyzed the introduction of multiple cross-border projects with Vietnam to create a multi-modal transport system, distribution centers, and border control checkpoints (Ikebe 2013). In response to these scalar conflicts, the central government has designated each province differentiated functions in the CICPEC to improve coordinated development and avoid logistical overaccumulation and polarized centers of regional development (Chen 2023).

Conclusion

This paper has explored the role of the Chinese state in instituting logistical fixes to restructure the spatial division of labor between its coastal and inland regions. These logistical fixes have been shown to support the regional advantages of the coastal region and, later, the inland region through a spatial division of logistics integration premised on the selective development of transport infrastructure and logistical systems. For Chinese capitalism, logistical fixes have constituted an integral part of its progressive integration with global production networks and value realization through circulation. During the Open Door Policy, the logistical fix was centered around the coastal region as a logistical hub and export platform. In contrast, the logistical fix during the New Normal has been centered around the inland region as a logistical hub and manufacturing center, which has aimed to improve its internal (domestic) connectivity with the coastal region and external connectivity with neighboring Asian countries while also providing new spaces of capital accumulation for large e-commerce firms and global production networks.

In combining the concept of the logistical fixes to specific state spatial planning and patterns of capital accumulation in Chinese capitalism, this paper showcases the state's role in securing the continued reproduction of capital and material infrastructure of global production networks. The article has shown how these fragmented development patterns reflect a spatial division of logistics integration between the coastal and inland regions, which the Chinese state has actively enforced to support its developmental paradigms. Foregrounding China's fragmented and regionally decentralized governance, we showcased how the layered implementation of such logistical fixes has been a contradictory process fraught with crisis tendencies because of its central-local relations.

The comparative-historical analysis of the Open Door Policy and New Normal shows how logistical fixes can lower costs and increase the profitability of commodities during logistical circulation. Logistical fixes thus enter as part of the broader profit-making calculus of capital valorization, as they can move the profitability threshold through various logistical technologies, solutions, and modes of integration. At the same time, logistical fixes have shown to be fraught with contradictions and disruptive tendencies. First, the logistical fix under the Open Door Policy noticeably resulted in logistical overcapacity and underutilization, in response to which the new logistical fix under the New Normal has emerged. Second, the logistical fix during the New Normal has similarly displayed certain tentative crisis tendencies, particularly the external aspects of the logistical fix under the New Normal. The BRI has already run into several frictions as projects are stalling (Buckley 2020), loans for investments are defaulting (Ruwanpura, Rowe, and Chan 2020), and geopolitical tensions around the project are rising (Lee, Wainwright, and Glassman 2018). The geopolitical tensions also pose a risk as potential sources of future crises, as the centering of the inland region as a manufacturing center and logistical hub is contingent upon the integration of the Asian regional economy. However, if the counteroffensive by the US and EU manages to pivot Asia away from further integration with China, the inland region might build up infrastructural capacity that cannot be absorbed in the long run.

Consequently, the threat of logistical overaccumulation and inefficiency might surface again, although this time from the oversaturation of logistical infrastructure in the inland rather than the coastal region. In anticipation of such potential risks, China has reduced Chinese lending for further projects and stricter restrictions on direct investments

from outside of China (Narins and Agnew 2022). Ultimately, the success of the inland regions of China as logistical and production hubs requires the continuous growth of external connectivity, so the question remains open-ended: can production networks move inland? In addition, as Chinese manufacturing moves inland, foreign manufacturing in China has started questioning its dependencies on China as a global production engine, something which could put into question the whole Chinese developmental paradigm and its integration with global circuits of capital. This would necessitate yet another form of logistical fix, more internally focused for a less connected world.

Declaration of conflict of interests

None.

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¹ Here, it is possible to disambiguate two different meanings of capital circulation that is often conflated. The first usage in the ‘abstract’ sense, which is well-established in the literature on spatial fixes, refers to the metaphorical interface between analytically distinct moments of capital accumulation, exemplified by how commodities are produced and exchanged between different stages of production until they finally reach the end-consumer and become valorized. The second usage that is underemphasized in the extant literature on spatial fixes refers to the ‘literal’ sense of circulation as a source of value creation, that is, the physically embedded processes of logistics, infrastructural linkages, and modalities of transportation that facilitate the physical movement of tangible commodities (and intangible commodities such as finance) between different moments of capital accumulation.

² The concept of developmental paradigms draws on regulation theory, which can be theoretically elaborated as the set of complementary institutional regularities and relations in production, circulation, and consumption that produce a relatively coherent process of capital accumulation (Jessop and Sum 2006). The assumption is that each developmental paradigm, exemplified by the Open Door Policy and New Normal, exerts differential functional and spatial demands on the bounded spaces of capital accumulation to secure its structured coherence in terms of the spatial organization of logistical development and integration. Consequently, every transition from one developmental paradigm to another upends inherited geographies of capital accumulation and creates moments of crisis (Massey 1995). In this sense, to successfully move to its new developmental paradigm, China must reconfigure its prior logistical system while also dealing with the crisis tendencies of its prior logistical fix.

³ These types of joint ventures were not just good in terms of providing necessary financing, but also in introducing technology and operational know-how into local economies. Foreign firms received many benefits from these joint ventures, such as leasing lengths above 30 years, exemptions from customs, tax duties while the projects were being set-up, and a reduction of duties once the projects became profitable (Aritua et al. 2022). Of course, foreign investors also had to give away operational knowledge and ultimate control as the joint ventures were always limited to 49% foreign control (Cullinane and Wang 2006). Over time, foreign investors were afforded further privileges, such as operating in the domestic freight transport system, owning their own infrastructure, or undertaking cargo operations independently (Zeng 2010).

⁴ TEU is a measure used in the Container shipping market, meaning a Twenty Foot Equivalent Unit, referring to the size of a standard container that is 20 feet long.

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- ⁵ This furthermore incentivized local governments, such as Shanghai and Shenzhen, to innovate in terms of investment financing and human capital reforms, creating incentive-based remuneration for all workers in ports and providing operational efficiencies.
- ⁶ Master plans also have a shared lineage with the notion of harmonious development inherited from the Hu Jintao administration. Such master plans preserve a degree of local autonomy as each province has interpretive leeway to adjust the policies to their local, although their strategic maneuvering must comply with the broader functional planning of the central government agencies, revealing a delicate rebalancing of its system of regionally decentralized authoritarianism. As stated in the 13th FYP (2016-2020), it emphasizes the importance of the government in its steering role, thus aiming “to improve the systems by which the market plays the decisive role in resource allocation and the government plays a more effective role” (NDRC, 2016: 14).
- ⁷ A relevant parenthetical remark is that SIPG started this integration independently from state support or mandate, and rather followed this strategy to establish a larger market share against other port competitors such as the port of Ningbo.
- ⁸ Dry ports are logistical infrastructures inland within inland regions which are granted “port status” meaning that they can serve as the point of entry and exit of goods jurisdictionally speaking, as customs services are provided. This aids in logistical efficiency and the overall reduction of trade costs for firms utilizing these services. It allows cargoes to be processed and sealed for export away from ports, thus allowing for a minimum idle time before embarking into a vessel. Similarly, imported containers can be lifted directly into rail or trucks from the vessel and be first processed further inland before entering the national market (see Wilmsmeier and Monios 2021).
- ⁹ Accompanying the rise of the e-commerce industry has been the build-up of a supporting digital infrastructure, which has accelerated information circulation and, in turn, increased turnover rates of consumer goods by mitigating idle capacity through the more efficient allocation of logistical resources. The digital hardware infrastructure has partly been supported by the investments by the state into the network of 5G internet. However, private investments by the pioneering e-commerce retailers, such as Alibaba and Taobao, have in parallel served an integral role in building the software infrastructure and organizational capacity to coordinate the large flows of orders, which has produced spillover effects in terms of human capital and technology that have benefited the overall e-commerce industry (Guangqin Li, Li, and Huo 2023).