

Spatial Production Characteristics, Influencing Factors, and Evolutionary Patterns of Development Zones in China: A 40-Year Retrospective Analysis

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Abstract

Over the past four decades, China's development zones (DZs) have served not only as vital engines for rapid industrialization and urbanization but also as critical policy spaces for facilitating global capital circulation, promoting regional coordination, and fostering institutional innovation. While the transformation of these zones exhibits complex spatial production characteristics, existing research often relies on Western theoretical models, leaving the unique mechanisms of China's DZs under-explored. By tracing the origins of spatial production theory and the three circuits of capital, this study examines the characteristics, key influencing factors, and evolutionary patterns of China's DZs. The findings reveal that, across different developmental stages, spatial production in DZs is characterized by government-led power embedding, capital circulation, and spatial restructuring. This process is primarily influenced by three factors: actors in spatial practices, capital circulation motives, and regional interaction modes. Building on these insights, the study proposes a "stage-based, process-oriented" evolutionary pattern, which explains the phenomenon of prioritizing production over consumption during the transformation of DZs and clarifies the evolving roles of the government—as participant, manager, and service provider—at various stages. This research provides a theoretical foundation for understanding state-led spatial production in DZs and offers insights into spatial governance and transformation in the new era.

Keywords: development zone; spatial production; influencing factor; evolutionary pattern; characteristic analysis

1. Theoretical Origins and Research Framework

1.1 Spatial Production and the Three Circuits of Capital

Following World War II, Western cities became the primary sites of capital accumulation and social contradiction. Challenging static views on spatiality, Henri Lefebvre proposed the theory of the production of space, arguing that space is a social structure shaped by the dialectical interaction of *spatial practice*, *representations of space*, and *spaces of representation*. This theory has been extensively applied to analyze China's strategic spaces, such as state-level new areas.

Neo-Marxist scholars, including David Harvey, Manuel Castells, and Neil Smith, integrated this theory with capital accumulation. Harvey’s model of the "three circuits of capital" posits that capital accumulation begins with the production and consumption of commodities (first circuit), shifts to the built environment and infrastructure when markets saturate (second circuit), and subsequently moves toward technological innovation and social welfare (third circuit). While these models provide a solid foundation, they must be adapted to account for the unique context of China's state-led development.

1.2 Development Zone Transformation: A Spatial Production Perspective

China’s DZs are unique institutional spaces that combine administrative power with market mechanisms. As hubs for foreign investment and institutional experimentation, they function as tools for "spatial fixes" to drive local economic growth and urban transformation. However, unlike market-driven Western models, China’s DZs are embedded in a system of "developmental government," serving as platforms for state-led national strategies. Consequently, it is essential to synthesize existing theoretical models with China’s specific national realities to analyze the characteristics, drivers, and evolutionary patterns of DZs (Fig. 1).

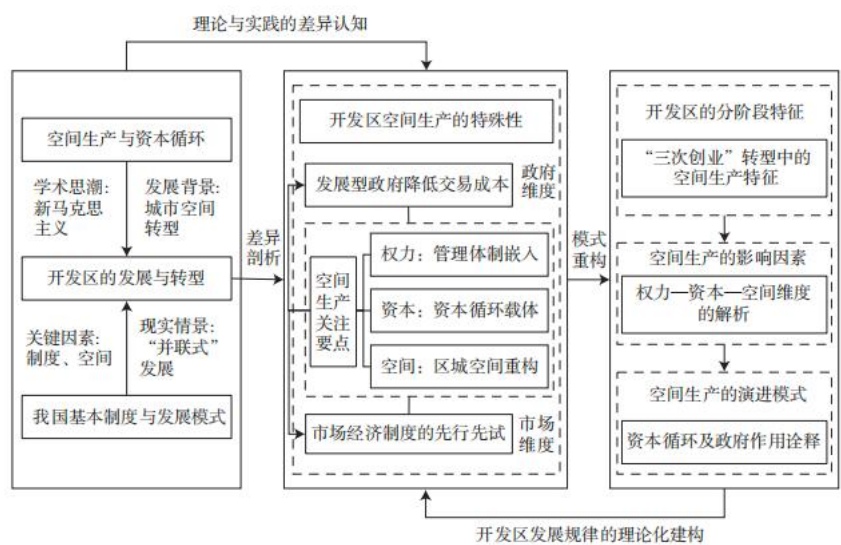


Fig.1 Research framework

2. Multi-Stage Analysis of Spatial Production Characteristics

2.1 Development Stages

The 40-year history of China’s DZs can be divided into three stages:

1980s to late 1990s (Institutional Experimentation): Following the opening-up policy, the first national-level economic and technological development zones (ETDZs) were established to attract foreign investment.

Early 2000s to 2012 (Reform and Regulation): Following WTO accession, DZs underwent significant reforms to address issues like inefficient land use. Post-2008, investment intensified to drive economic recovery.

Post-2012 (Quality and Innovation): In the new era, emphasis has shifted toward high-quality development, industrial innovation, and the integration of DZs into the "dual circulation" pattern, leading to the creation of new strategic areas like free trade zones.

2.2 Spatial Production in the "Three Waves of Entrepreneurship"

The transformation of DZs—often termed "Second" and "Third" waves of entrepreneurship—reflects fundamental shifts in spatial production (Fig. 2).

First Wave: Focused on "industrial enclaves" for export-oriented processing, utilizing preferential policies to attract foreign capital.

Second Wave: Emphasized industrial upgrading and technological innovation, with governments actively fostering internal growth engines.

Third Wave: Focuses on integrated innovation districts and "industry-city integration," shifting from singular industrial carriers to complex urban centers.

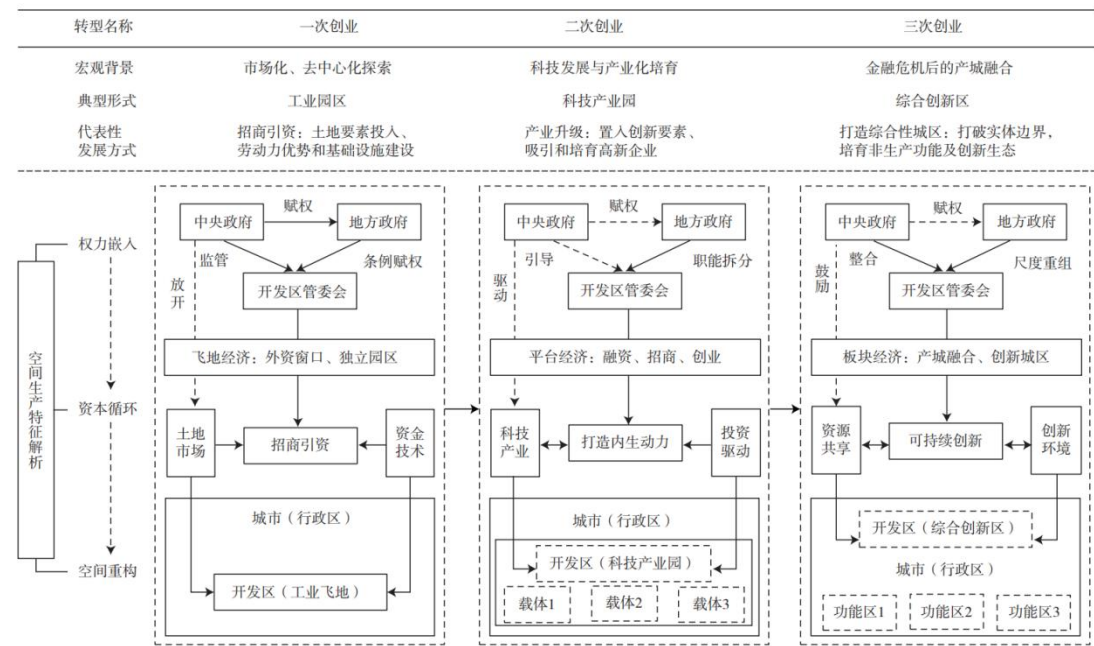


Fig. 2 The spatial production characteristics in the three transitions of development

3. Influencing Factors of Spatial Production

The spatial production of China’s DZs is shaped by three key factors that distinguish them from Western models (Fig. 3):

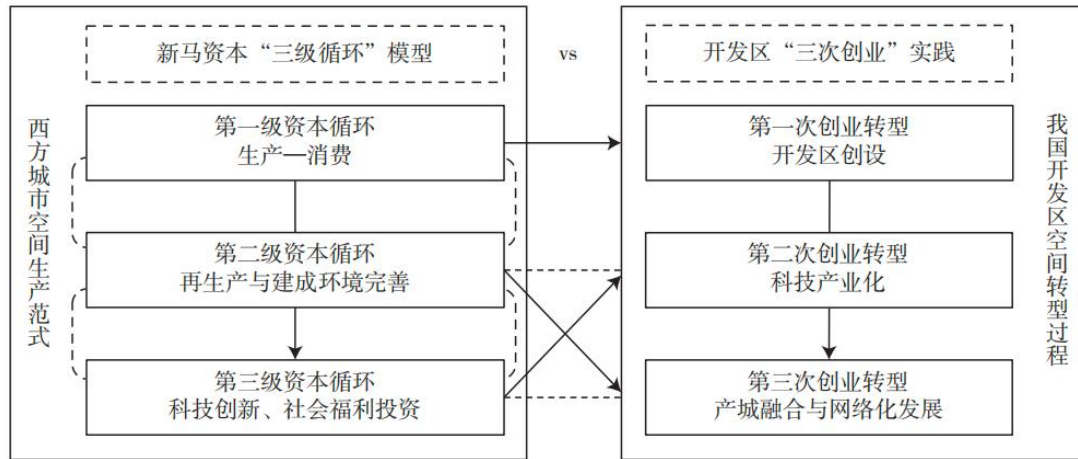


Fig.3 Differences between practice process of development zones and the three circuits of capital model

3.1 Actors in Spatial Practices

State power is deeply embedded in the development process. Under the state-owned land system, local governments—often through "management committee + development company" models—act as primary planners, investors, and rule-makers. While this ensures high efficiency, it requires better legal grounding and institutional maturity.

3.2 Capital Circulation Motives

DZs serve as platforms for gaming between diverse interests. Central government promotes policy experimentation, while local governments prioritize economic performance and investment attraction. International and domestic capital gravitate toward these zones to leverage lower costs and favorable investment environments, creating a dynamic, government-guided market mechanism (Fig. 5).

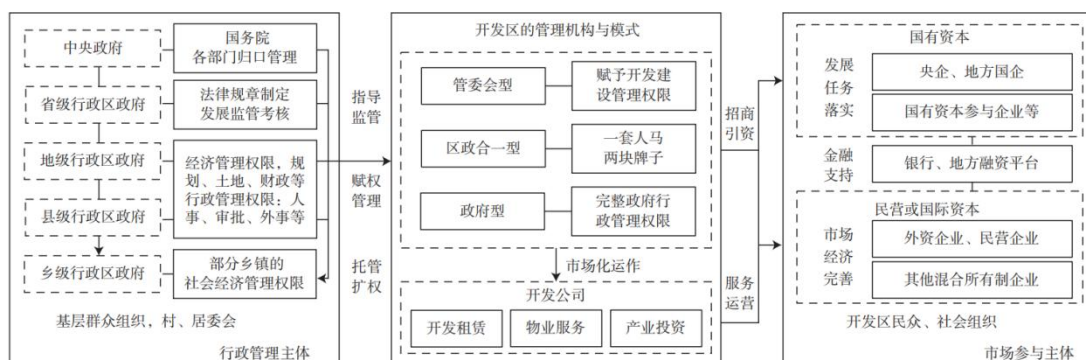


Fig.4 Relationship between actors of spatial production in development zones

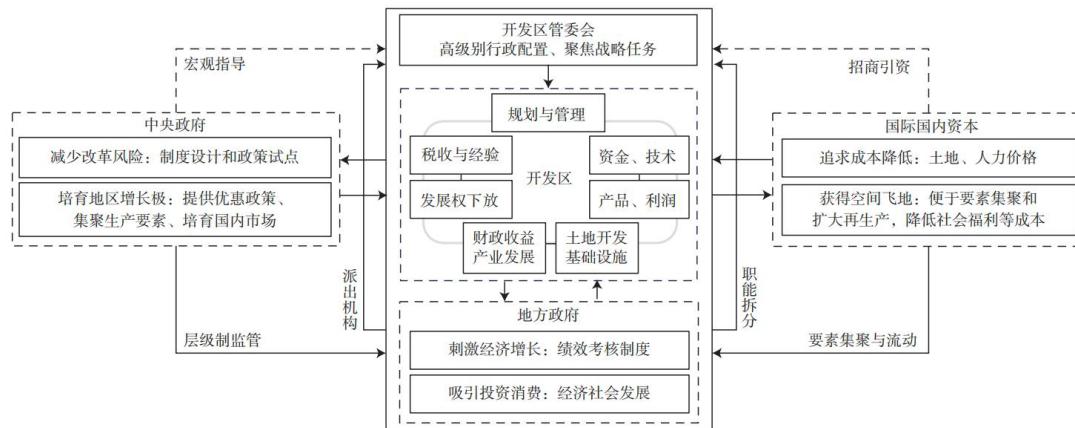


Fig.5 The capital circulation motivation of spatial production in development zones

3.3 Regional Interaction Modes

Interaction between DZs and their host cities evolves through three modes: **"Integrated Administration"** (co-location of management), **"Cross-District Governance"** (management over multiple administrative areas), and **"One Zone, Multiple Parks"** (integrating geographically dispersed innovation clusters) (Fig. 6).

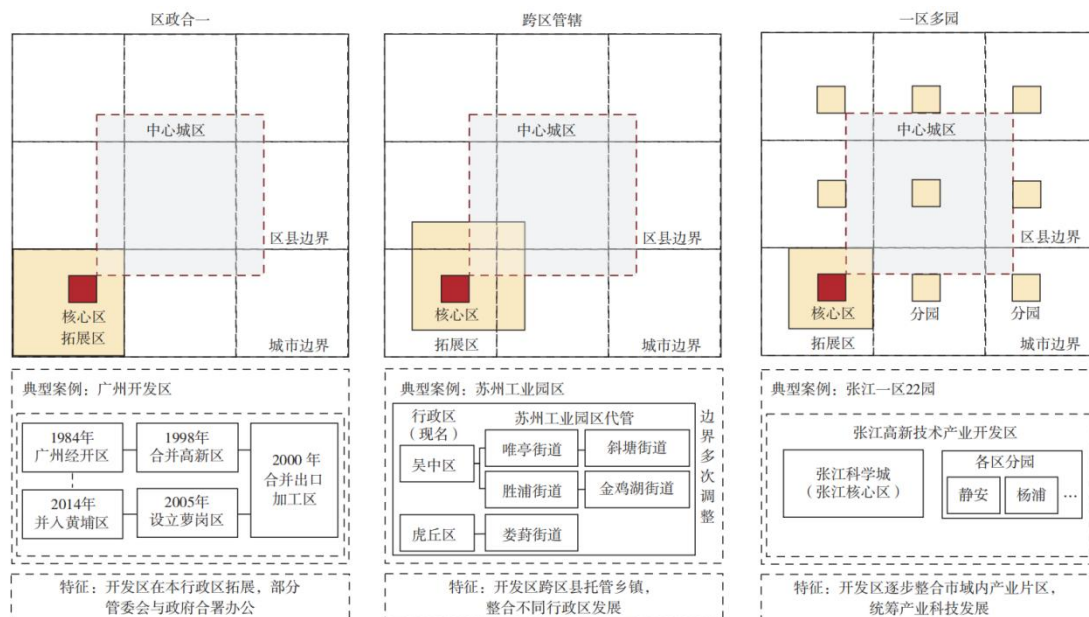


Fig.6 Analysis of typical spatial interaction models between development zones and cities

4. Evolutionary Patterns of Spatial Production

Based on the analysis, we identify a "stage-based, process-oriented" evolutionary pattern (Fig. 7):

Stage 1 (Creation of Industrial Enclaves): Government focused on institutional design to facilitate external circulation and infrastructure development, effectively reducing transaction costs for foreign capital.

Stage 2 (Production Priority, Consumption Lag): To maximize economic output, resources were prioritized for production. While this led to rapid industrial accumulation, consumption-oriented functions and social services remained underdeveloped.

Stage 3 (Industry-City Integration): DZs are transitioning into core innovation districts that support the internal "dual circulation" and provide high-quality urban services, optimizing the layout of new quality productive forces.

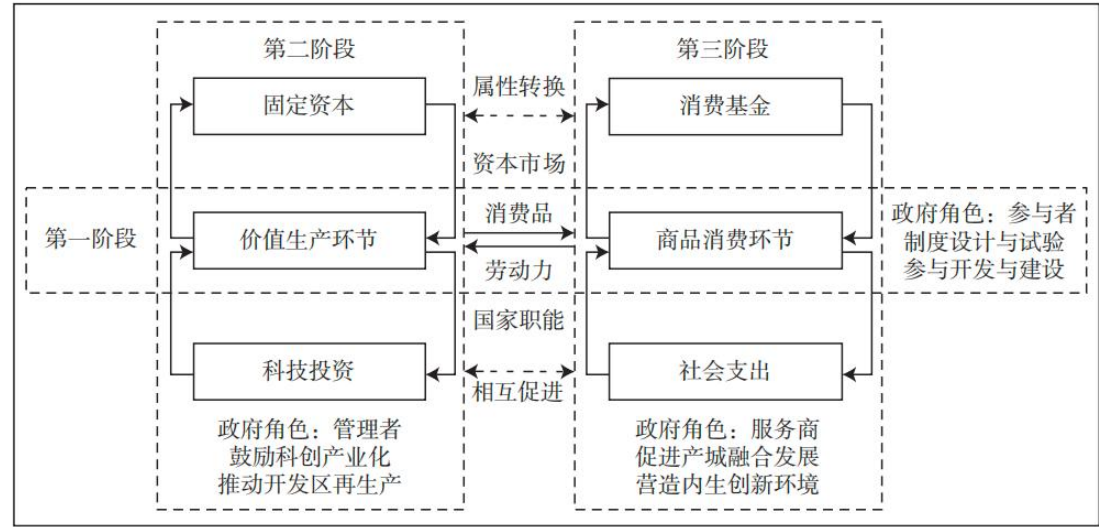


Fig.7 The multi-stage and multi-process evolutionary pattern of spatial production in development zones

5. Conclusion

Over 40 years, China’s DZs have evolved through three distinct stages of spatial production. Unlike Western paradigms, this evolution is characterized by the central role of the state in institutional design and spatial practice. By navigating the interaction between power, capital, and space, China has constructed a unique model of spatial production. While this study focuses on comprehensive national-level DZs, future research could expand to investigate the diversity of specialized zones to further enrich urban theory in the Chinese context.

Acknowledgments

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Notes

[1] See the official statement by President Xi Jinping on national-level

ETDZs: https://www.gov.cn/yaowen/liebiao/202410/content_6981715.htm.

[2] Lefebvre's spatial triad: physical space (spatial practice), symbolic representation (representations of space), and lived experience (spaces of representation).

[3] Harvey's "spatial fix" addresses capital over-accumulation through geographical expansion.

[4] The "Three Laws" of foreign investment (in effect until the 2019 Foreign Investment Law).

[5] Regulations regarding land regulation and efficiency, e.g., State Council Decree [2006] No. 31.

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