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Industrial Transfer and Optimization of
Regional Spatial Structure in China

产业转移与中国区域 空间结构优化

李国平等◎著



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前言

改革开放之前，中国实施向内地倾斜、均衡布局的区域发展战略，形成了沿海和内地两大板块的经济空间格局。改革开放之后，由于实施东部沿海地区优先发展的战略，中国区域经济总体呈现出失衡的增长格局，区域差距不断扩大。近年来，国家先后实施了西部大开发、东北等老工业基地振兴、中部崛起等旨在缩小区域差异的区域政策，使得中国区域间差距呈现缩小态势，区域经济逐步从不均衡发展进入相对均衡、协调发展的阶段。在这一大背景下，本书从产业转移和空间结构的理论研究出发，聚焦于中国产业转移过程和空间结构的变迁，全面回顾了中国经济空间格局演化和产业优势的地理变迁历程，从不同视角和尺度深入探讨和分析了区域不同行业的产业转移特征和趋势，以期为国家重大区域战略和产业转移指导政策提供决策支撑。本书共分为五篇，具体包括：区域产业转移与空间结构演化的理论研究、中国区域产业转移与空间结构演化的实证研究、不同空间尺度的区域产业转移与空间结构演化研究、基于微观视角的回归式产业转移与空间结构演化研究、中国区域产业转移与空间结构优化政策研究。

本书第一篇包括第一章（中国区域空间结构相关研究回顾）、第二章（产业转移相关研究回顾）、第三章（产业转移与空间结构演化的关联机制），是本书的理论基础和研究指导框架。本篇系统梳理了国内外区域经济学家针对中国经济的空间组织架构，以及中国区域差异与空间发展平衡性两个重要论题的研究，首先重点对影响区域经济空间结构的四类主要因素进行了总结，并基于区域发展阶段视角对主导中国区域空间结构演化的因素进行了分析；其次，系统回顾了国内外关于“产业转移”的重要理论和实证研究，对经典的产业转移理论及基于新经济地理的空间一般均衡理论框架所观察的相关逻辑机制等理论研究成果进行了梳理，基于产业转移的过程、动因和效应的视角对主要的实证研究进行了评述，基于政策研究视角，在整合要素流动和产业关联两种集聚机

制的空间经济模型基础上,进一步总结了相关研究在国家和区域层面围绕产业转移的激励和管控策略;最后,基于新经济地理理论,构建了一个整合要素转移和产业关联两大集聚机制的空间一般均衡模型,作为探求产业转移与空间结构相互影响的理论平台。

本书第二篇包括第四章(中国经济空间格局演化与区域产业变迁)、第五章(中国制造业的区域转移与空间结构演化)、第六章(中国纺织服装业的区域转移与空间结构演化)、第七章(中国汽车制造业的区域转移与空间集聚)、第八章(中国生产性服务业空间分布),是本书实证分析板块的核心。该部分依据不同产业属性差异,对典型产业及行业类型的产业转移与空间结构演化历程进行了全面回顾,多角度展示了区域产业转移对于中国空间结构特征变迁的重要作用 and 深远影响,探究了不同产业类型转移的影响因素和控制条件,力图产业转移政策的制定提供针对性依据。本篇首先在全局视角下定量判别并刻画了中国经济空间格局演化的阶段及其特征,并对新中国成立以来的区域经济集聚程度变化进行测度和分析,阐释了中国经济空间格局所经历的沿海—内地均衡发展、沿海化非均衡发展,以及东、中、西部相对均衡发展的主要历程,发现区域经济空间格局的演化与区域产业结构和竞争优势的变迁密切相关;其次,聚焦于产业转移特征最为显著的制造业及其细分行业,分析其转移强度和路径,发现其转移过程涉及多个空间层面,总体上遵循自东向西、从发达地区向次发达地区转移的基本规律,且不同行业具有一定的差异;再次,选取具有代表性的纺织服装制造业和汽车制造业作为研究对象,全面回顾了这两大类制造业的产业转移历程,在不同空间尺度视角下分析和刻画其细分行业的转移特征及对空间结构演化所产生的效应,并使用计量方法对微观尺度的产业转移影响因素进行实证分析;最后,选取作为产业链分工体系中高附加值环节的生产性服务业作为研究对象,从行业和空间两个维度对其空间分布特征与规律进行归纳和总结,发现中国生产性服务业整体集聚程度正在上升,而市场潜能是影响该产业空间分布的关键因素。

本书第三篇包括第九章(泛长江三角洲区域制造业转移与区域空间结构演化)、第十章(京津冀区域制造业分工与区域转移)、第十一章(北京都市区产业郊区化与经济空间演化),是本书实证板块的主要部分。区别于第二篇的分行业视角,该部分将空间尺度作为主要切入点选取典型地区进行实证分析发现,在包括城镇群、大都市圈和城市等不同空间层面上,产业地理格局变化同样具有推动和控制区域空间结构演化特征和方向的效应。本篇首先选取泛长江三角洲地区,系统归纳了泛长江三角洲地区制造业及其典型行业的区域转移特征及其产业职能分工现状,进而利用基尼系数方法刻画空间集聚程度的演变过程;其次,选取京津冀地区,将区域分工水平作为着眼点,刻画和归纳了制造

业区域内转移的特征和趋势,并从不同角度划分转移类型,进而对分工与转移的相关关系进行了实证分析;最后,针对北京都市区产业郊区化这一具体的产业转移过程和空间特征进行分析,并从就业集聚、空间结构和地域分工格局等多个角度对郊区化的效应进行测度,发现北京都市区的就业分布明显呈现郊区化的发展趋势,并且就业分布的集聚程度有所增加,说明该过程并非“一般分散化”,而是分散化的集聚。

本书第四篇包括第十二章(回归式产业转移的转移模式与动因)和第十三章(回归式产业转移的优化效应),是本书微观案例研究的主要部分。本篇首先从回归式产业转移的概念阐释及与其他产业转移形式的区别分析出发,提出了典型地区回归式产业转移模式的理论模型,并从实证研究角度证明其理论假说;其次,对典型地区的回归式转移动因进行了统计分析,发现回归式产业转移过程发生的主要动因是土地要素;最后,分析和评价了典型地区回归式产业转移对包容性城镇化发展和推动产业转型升级的优化效应。

本书第五篇包括第十四章(中国区域空间结构的发展特征和趋势)和第十五章(面向区域空间结构优化的产业转移推进路线与政策),是本书的政策研究部分。本篇首先分析了中国区域空间结构在全国、大区、都市圈等多个空间维度上的发展态势,认为中国区域空间格局的基本特征依旧为点轴格局,同时轴线延伸与交错促成了部分地区的准网络化发展,不同大区和省市的空间格局所处阶段有一定差异,但均表现为由点状到线状、继而向多中心和网络化方向的发展趋势;其次,提出在区域空间结构优化的目标导向下,中国未来应继续坚持自东向西的区际产业转移推进路径,缓解区域发展不平衡问题。在大区层面,东部沿海地区应重点推动区域内部优势分散化的扩散式转移,促进空间格局继续向“多核心、网络化”演化;中部、西部和东北地区在因地制宜地承接东部产业转移的同时,应积极推动空间格局由“点轴”向“网络化”演化。在都市圈层面,京津冀、长三角、珠三角作为中国区域发展格局中的优化开发区域,产业转移推进的重点是在中心城市和周边城市之间构建基于价值链分工的区域产业体系,促进区域协同发展。

本书建立了产业转移和空间结构演化间的理论关系和均衡框架,揭示了当前中国多空间层面、不同程度且涉及多个产业类型的产业转移过程及其特征,对产业转移助推下的空间结构变迁过程进行了深入刻画,并提出了相关政策建议,以期为国家产业转移和空间结构优化战略的制定提供科学依据和研究参考。

李国平

2016年1月

Preface

Before undergoing economic reforms and opening up, China implemented the regional development strategy of tilting to the mainland and balanced distribution, forming two major economic spatial regimes, namely, coastal and inland. After such reforms and opening up, the regional economy of China has generally displayed an uneven growth, with increasing regional disparities, owing to the implementation of strategies for priority development in the eastern coastal region. In recent years, China has implemented the Great Western Development, revitalized the old industrial bases in Northeast China, and supported the rise of Central China and other regional policies. All these undertakings have narrowed the regional differences in the entire nation, and the regional economy has gradually entered a relatively balanced and coordinated development stage from an unbalanced development. Given this background and based on the theory of industrial transfer and regional spatial structure, this book focuses on China's industrial transfer and changes in regional spatial structure. In particular, the book comprehensively reviews the evolution of China's economic spatial patterns and the geographical changes in its industrial advantages. From different perspectives and in various scales, this book analyzes further the features and trends of regional industrial transfer in different industries and attempts to propose a national regional development strategy to provide decision-making supports for the national major regional strategy and industrial transfer policy. This book is divided into five parts, namely, ① theoretical research on regional industrial transfer and the evolution of regional spatial structure, ② empirical study on such topics in the Chinese context, ③ China's regional industrial transfer and the evolution of regional spatial structure in different spatial scales, ④ micro perspective-based returning industrial transfer and the evolution of regional spatial

structure, ⑤China's strategies and policies regarding this topic.

The first part of this book, including Chapter 1 (Review of the research on regional spatial structure in China), Chapter 2 (Review of the research on industrial transfer), and Chapter 3 (Associative mechanism between industrial transfer and regional spatial structure evolution), provides the theoretical basis and research guidance framework for this study. This part aims to systematically review the related research at home and abroad about the two core concepts and attempts to explain their theoretical and policy implications.

Chapter 1 focuses on both domestic and foreign studies about China's economic spatial organization, regional economic disparities, and spatial coordinated development by reviewing the spatial structure evolution literature. The chapter summarizes four main factors that influence regional economic spatial structure and analyzes those factors driving China's spatial structure evolution from the perspective of regional development stage. Chapter 2 reviews the related important theories and empirical research on industrial transfer at home and abroad. The chapter also briefly reviews the classic industrial transfer theory and the related logical mechanism under the framework of spatial general equilibrium theory based on new economic geography. Furthermore, the chapter reviews the main empirical research on the process, motivation, and effect of industrial transfer. Finally, from the prospective of policy study, this chapter further summarizes the related research on the motivation and management strategy around industrial transfer at the national and regional levels based on the spatial economic model that integrates two agglomeration mechanisms, namely, factor transfer and industry association. Chapter 3 establishes a spatial general equilibrium model for integrating factor transfer and industry association mechanisms based on new economic geography theory as a theoretical platform for showing the relationship between industrial transfer and regional spatial structure evolution.

The second part of this book includes Chapter 4 (Evolution of economic spatial pattern and regional industrial transfer in China), Chapter 5 (Regional transfer and evolution of the spatial structure of China's manufacturing industry), Chapter 6 (Regional transfer and evolution of the spatial structure of China's textile and garment industry), Chapter 7 (Regional transfer and spatial clustering of China's automobile industry), and Chapter 8 (Spatial distribution of China's producer services). These chapters comprise the core of the empirical analysis. Based on the distinction of different industrial attributes, this section comprehensively reviews the

evolution of industrial transfer and spatial structure in typical industries, shows the important role and influences of regional industrial transfer on the changes in China's spatial structure in multiple angles, and deeply investigates the influence factors and control conditions of different types of industrial transfer. These efforts are made to provide a targeted basis for the decisions on China's industrial transfer policy.

Chapter 4 quantitatively distinguishes and accurately describes the stages and characteristics of the evolution of China's economic spatial pattern on the whole. Through empirical analysis, the chapter also measures and analyzes the change in the regional economic agglomeration degree since the founding of new China to discuss and conclude the country's spatial structure evolution driven by regional industrial transfer. This chapter objectively explains the major processes of coastal-inland balanced development, coastal non-balanced development, and the relatively balanced development in the eastern, middle, and western regions of China. The regional disparities are basically first narrowed, then expand and narrow again. Empirical research posits that the evolution of regional economic spatial structure is closely related to the changes in regional industrial structure and competitive advantages. Chapter 5 focuses on the manufacturing industry and its sub-sectors with the most significant features of industrial transfer, and it deeply analyzes this industry's transfer intensity and routine. This transfer covers many spatial levels, generally following the basic rules from the east to the west and from the developed areas to the sub-developed ones. Furthermore, different industries indicate a certain difference. Such analysis facilitates discussion about the influence factors of the regional transfer of China's manufacturing industry through a rigorous econometric analysis. Chapters 6 and Chapters 7 select the representative textile and garment manufacturing industry and the automobile manufacturing industry as the objects of study. These chapters comprehensively review the industrial transfer of such manufacturing industries and carefully analyze and describe the trend characteristics of subdivision industrial transfer and its effect on the evolution of regional spatial structure in different spatial scales and angles. In addition, these chapters empirically analyze the influence factors of industrial transfer at the micro level by using the econometric methods. The study shows that the manufacturing industry and its typical industrial transfer decrease the regional spatial agglomeration, with a significant trend of central diversification and advantage decentralization. This process is influenced in different degrees by industrial basis, market size, infrastructure, labor, and other factors. Chapter 8 selects producer services with high added value in the labor division

system of industrial chain as the objects of study. The chapter concludes and summarizes the characteristics and laws of spatial distribution in industrial and spatial dimensions. The chapter reveals that the overall agglomeration of China's producer service industry increases and that market potential is the key factor that affects the spatial distribution of such industry.

The third part of this book covers Chapter 9 (Industrial transfer and evolution of the regional spatial structure in Pan Changjiang River Delta region), Chapter 10 (Labor division and regional transfer of the manufacturing industry in Beijing Tianjin Hebei region), and Chapter 11 (Industrial suburbanization and evolution of economic spatial structure in Beijing metropolitan area). This part represents an important empirical section of the book. Different from the perspective of Part 2, this part uses the spatial scale as the main entry point to select typical areas for empirical analysis. The industrial transfer in geographic locations at different spatial levels, including the extended metropolitan regions and the metropolitan areas, plays a role in driving and controlling the characteristics and direction of the evolution of regional spatial structure.

Chapter 9 selects the area with the largest economy in China, Pan Changjiang River Delta region, to comprehensively study the regional transfer characteristics and industrial labor division status of the manufacturing industry and other typical industries in this region by analyzing historical data. Such an undertaking is accomplished to describe the evolution of spatial agglomeration using the Gini coefficient and to raise the targeted suggestions about industrial transfer and spatial policy. This chapter shows that the industrial transfer in the region complies with the law to transfer from the developed areas to the less and underdeveloped ones and that the spatial agglomeration in most industries is gradually down. In this process, the area in which the industry transfers out is gradually transformed into a technology-intensive city, and the area in which industries enter and are established promotes industrial restructuring and upgrading. Chapter 10 selects the manufacturing industry in Beijing Tianjin Hebei region as the object of study. The chapter objectively describes and concludes the characteristics and trends of regional transfer in the manufacturing industry with regional labor division as a starting point and conducts an econometric empirical study on the correlation between labor division and industrial transfer. The study shows that the path features of the manufacturing industry in this region are similar to those in the Pan Changjiang River Delta region. However, the different types of industry vary in terms of their specific regional orientations. This chapter

strictly proves the high correlation between industrial transfer and regional gradient under the econometric analysis. Chapter 11 narrows the spatial scale to the Beijing metropolitan area, analyzes the overall process and spatial features of the industrial suburbanization within the metropolitan area, and concludes the effects of suburbanization from the aspects of employment agglomeration, spatial structure, and regional labor division pattern. This chapter shows that the employment distribution in the Beijing metropolitan area significantly exhibits the development trend of suburbanization that mainly extends in northwest and southeast directions. With employment decentralization, the agglomeration of employment in the whole area is slightly increased, indicating that this process is not a general decentralization, but an agglomeration process with decentralization.

The fourth part of this book, including Chapter 12 (Mode and motivation of returning industrial transfer) and Chapter 13 (Optimization effect of returning industrial transfer), is the major portion of the micro level case study. Explaining clearly the concept of returning industrial transfer and its difference with other types of industrial transfer, Chapter 12 further investigates the theoretical model of returning industrial transfer in typical regions and proves the theoretical hypothesis through empirical study. To describe the detailed features of this process, a statistical analysis is conducted on the motivation for implementing returning industrial transfer in a typical region. This chapter indicates that such transfer helps underdeveloped areas seek a new means to undertake leap development; land is the main motivation for this process. Chapter 13 analyzes and concludes the optimization effects of returning industrial transfer in a typical region. This chapter also measures and evaluates the promotion effect on inclusive urbanization and industrial transformation and updating. This chapter shows that returning industrial transfer is among the processes that can be used to realize a great leap forward of the regional economy.

The fifth part of this book, covering Chapter 14 (Development characteristics and trend of the regional spatial structure in China) and Chapter 15 (Industrial transfer road map and policies to optimize China's regional spatial structure), conducts policy analyses and provides policy suggestions. Based on considerable theoretical and empirical research in previous sections, Chapter 14 concludes the basic development characteristics and trend of China's regional spatial structure in different spatial scales, such as in the whole country, in major regions, in major metropolitan areas, etc. The results indicate that the point-axis pattern remains the basic characteristic of China's regional spatial structure. The extension and

interleaving of the axial lines promote a quasi-network structure in certain areas. The different major regions, provinces, and cities have different spatial patterns, but show the similar developing trend from point to line, then to multiple centers and network. Chapter 15 proposes the future directions and road map of industrial transfer in China, to further optimize China's regional spatial structure and alleviate regional disparities. It is proposed that China should insist promoting the industrial transfer from east to west throughout the whole country. Within the east region, the advantage diversification industrial transfer should be adopted to facilitate the multinucleation and networking of regional spatial structure; while in the central, west and northeast regions, the acceptance of transferred industries from eastern region should facilitate the transform of regional spatial structure from the point-axis pattern to the network structure. For three major metropolitan regions in China, namely Beijing-Tianjin-Hebei Region, Changjiang River Delta Region, Zhujiang River Delta Region, the focus of industrial transfer should be on constructing the regional industrial division of labor system between the central city and the peripheral cities, to promote the regional coordinated development.

This book establishes the theoretical relationship and equilibrium framework between industrial transfer and regional spatial structure evolution, and it reveals the process and characteristics of industrial transfer at multiple spatial scales and from different perspectives, covering many industry types in China. This book also describes thoroughly the changes in spatial structure under the promotion of industrial transfer and proposes related policy suggestions to provide guidelines for the policy decisions regarding national industrial transfer and spatial structure optimization.

Li Guoping

January 2016

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