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基于中国制造业的产业 集聚变动实证研究

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内容提要

本书在产业集聚收敛学说框架下,尝试用经济地理学、产业经济学等学科的基本原理,采用数理经济学、计量经济学方法,将产业集聚的时间演化分析和空间演化分析相结合,从理论上对产业集聚变动模型进行了分类和梳理;从实证上总结了我国制造业20年来集聚变动的时空演变特点,结果表明中国制造业20年来产业集聚水平不断增长,但增长并非与固定的集聚区位相联系,产业集聚的空间发生了相当的变化;分别以产业移动性和动态外部性作为切入点对中国制造业产业集聚变动进行了细化分析。

责任编辑:王剑宇
装帧设计:SUN工作室

责任校对:韩秀天
责任出版:杨宝林

图书在版编目(CIP)数据

基于中国制造业的产业集聚变动实证研究/乔彬著.北京:知识产权出版社,2008.6

ISBN 978-7-80247-296-9

I. 基… II. 乔… III. 制造业—产业经济学—研究—中国
IV. F426.4

中国版本图书馆CIP数据核字(2008)第061819号

基于中国制造业的产业集聚变动实证研究

乔彬著

出版发行:知识产权出版社

社址:北京市海淀区马甸南村1号

网 址: <http://www.ipph.cn>

发行电话:010-82000893 82000860 转 8101

责编电话:010-82000860-8225

印 刷:知识产权出版社电子印制中心

开 本:880mm×1230mm 1/32

版 次:2008年6月第1版

字 数:165千字

邮 编:100088

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经 销:按需出版网及发行部直销

印 张:6.375

印 次:2008年6月第1次印刷

定 价:18.00元

ISBN 978-7-80247-296-9/C·081

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摘要

产业集聚作为有效的空间组织形式是区域经济发展的重要源泉和创新中心,是区域经济学、产业经济学、经济地理学等学科共同关注的热点和前沿话题。目前国内外对产业集聚的研究主要集中在产业集聚来源及形成的分析,而对于集聚变动的研究尤其对中国产业集聚变动的研究还比较薄弱。产业集聚变动研究主要是对产业集聚时间、空间演变的分析。

本书在产业集聚收敛学说框架下,在前人研究基础上,尝试用经济地理学、产业经济学、区域经济学等学科的基本原理,采用数理经济学、计量经济学方法将产业集聚的时间演化和空间演化分析相结合,从三个层次展开了研究。首先,从理论上对产业集聚变动模型进行了分类和梳理,并对产业集聚变动因素进行了归纳和分析。其次,从实证上总结了我国产业集聚变动的一般趋势和检验了相关因素的影响。采用国外目前通行对产业集聚的测度方法 EG 指数,计算得出 20 年来中国制造业产业集聚水平不断增长,但增长并非与固定的集聚区位相联系,产业集聚空间发生了相当的变化,接着分别以产业移动性和动态外部性作为切入点分析了这些因素对产业集聚变动的影响。最后,建模分析了产业集聚变动对经济增长的影响。具体来说本文主要成果和创新点如下。

第一,根据产业集聚模型的假定及模型的分析思路,将产业集聚模型界定为两类:集聚经济发散说(强调历史事件和产业创立初期自然优势的重要性)和集聚经济收敛说(强调产业集聚时间和空间演变),并对这两类模型进行了梳理。尤其是对产业集聚收敛模型进行了细致的归纳和整理,把这方面的研究主要分



为两个方面：产业集聚变动的实证研究；不同变动因素与产业集聚的改变。

第二，由于是借助区域数据从产业维度层面展开的研究，因而本书将产业集聚变动因素界定为产业内生因素和产业外生因素。自然禀赋、运输成本、技术水平、市场、政府行为、外商直接投资和知识溢出构成了产业集聚形成和发展的外生约束条件；产业竞争状态和产业自身因素构成了产业的内生因素，并对这些因素进行了较为全面的分析；此外，结合中国制造业产业集聚时空演变实际，对产业外生因素和内生因素进行了细化分析。

第三，首次将中国制造业移动性和产业集聚变动结合起来分析，考察中国制造业集聚变动与产业移动性的相关性。根据第二章的计算结果和结论，通过 Dumais 的模型把 EG 指数分解为系统变动与随机变动，如果系统变动为正，则说明历史事件对产业集聚变动为正的影响，如果系统变动为负，也即平均复归效应对产业集聚变动为负的影响；根据推导随机变动总为正。回归结果表明，在样本期平均复归效应导致集聚水平下降了 15.8%，同时随机变化效应导致集聚水平提高了 50.8%。在较强的随机效应和相当的复归效应下，证明了我国产业集聚水平增长的背后存在较强的产业移动性，同时说明了样本期历史事件在产业集聚变动中的作用非常有限。

第四，创立动态外部性、产业生命周期与集聚变动的研究框架，通过对动态外部性与制造业发展的实证研究，导出动态外部性与集聚变动之间的关联性。中国制造业实证分析表明，不同生命周期的产业所属的动态外部性不同，因而随着产业生命周期阶段发生变化，产业的动态外部性由 Jacobs 转变为 MAR。由于这两种外部性要求的产业发展环境不同，因而产业集聚会发生相应的变动。

第五，建模分析了产业集聚变动对经济增长的影响。结果显示在样本期，中国制造业集聚变动与经济增长正相关。产业集聚水平提高，则经济增长；产业集聚水平下降，则经济增长减慢。



ABSTRACT

As the effective spatial organization form, the industry agglomeration is the important headspring and innovation center of the region economy development, and is hot spot and frontier of Regional Economics, Industrial Economics, Economic Geography etc. At present the research of the industry agglomeration mainly concentrates on analysis of the industry agglomeration originates and forms, but regarding agglomeration dynamics the research also quite weakly, especially the study of agglomeration dynamics in china is blank. The industry agglomeration dynamics research mainly analyses industry accumulation time, the space evolution.

Under the framework of the Industry Agglomeration Convergence Theory, this paper which based on the predecessor's study, intents to make use of the basic principle of Economic Geography, the Industrial Economics and the Regional Economics, and the methods of Mathematical Economics and the Econometrics, combining the time change with the spatial evolution analyzed of the industry agglomeration dynamics in three aspects: Firstly, this dissertation classified the model of industrial agglomeration dynamics and analyzed it's influence factor. Secondly, the change trend of Chinese manufacturing industrial agglomeration and some factor's influence were empirically studied. Using the prevailing measure method to calculate the EG index, the results show that the Chinese manufacturing industry



agglomeration level was increasing during the 20 years, but this increase has not relation with fix agglomeration location, and the industry agglomeration space changed considerably. Then, the influence of industrial mobility and dynamic externality on industrial agglomeration dynamics were studied. Lastly, this study built the model to analysis the impact of industrial agglomeration dynamics on economic growth. The contributions of this dissertation are as follows:

Firstly, we analyze the ideas and the method of many agglomeration economic models, according to the hypothesis of the numerous models and the industry agglomeration whether is a dynamic process or not, we divide agglomeration model into two types: agglomeration economy convergence model and agglomeration economy disperse model, and comb them. Particularly we pay more attention to the agglomeration convergence model. The research includes two aspects: the change of industry agglomeration along with the change of time and space; by analyzing the divergence factors to explain the industry agglomeration is a dynamic process.

Secondly, because the paper by drawing on regional data from the industrial dimension to research, which will divide industrial clustering changes into the endogenous factors and the exogenous factors. Natural endowments, transportation costs, technology, market, the government, foreign direct investment and knowledge spillovers constitute the external constraints of industrial agglomeration formation and development; Competitiveness and the state of industries constitute exogenous factors of industry, and these factors were more comprehensive analysis; In addition, the paper combines industry agglomeration



space—time evolution in China's manufacturing to analysis the exogenous factors and endogenous factors in great detail.

Thirdly, combining the Chinese manufacturing industry mobility with the industry agglomeration dynamics for the first time, we inspect the relevance of agglomeration dynamics and the industrial mobility of Chinese manufacturing industry. According to computed result and the conclusion of the former chapter, by using the Dumais model to decompose the EG index into system change and the stochastic change. If system change was positive, the history affair had positive impact on industrial agglomeration dynamics; If system change was negative (average regression effect), the history affair had negative impact on industrial agglomeration dynamics. According derivation, the stochastic effect is always positive. The regression result show that the average regression effect caused to agglomeration the level to drop 15.8% at the sample period, simultaneously the effect of stochastic change cause agglomeration level to enhance 50.8%. Under a stronger stochastic effect and the suitable regression effect, it had proven that our country industries have the stronger industrial mobility behind agglomeration the level grows, and that historical events have extremely limited function in the industrial agglomeration change at the sample period simultaneously.

Fourthly, the research framework of dynamics externalities, the industrial life cycle and agglomeration mobility is established, then empirical study in the dynamics externalities and the manufacturing industry development is carried out, the relevance of dynamics externalities and the agglomeration dynamics is derived. Chinese manufacturing industry empirical analysis indica-



ted that, industry which belong to different life cycle externalities are different, thus dynamic externalities change from the Jacobs to MAR along with the industrial life cycle stage, because these two kind of externalities requests industrial development environment is different, thus the industrial agglomeration has the corresponding change.

Fifthly, This study built the model to analysis the impact of industrial agglomeration dynamics on economic growth. Empirical study results show that the Chinese manufacturing industry agglomeration dynamics has positive impact on economic growth during the sample period. The conclusion is; The level enhancement of industry agglomeration promote economy growth; The industry agglomeration level to drop can cause the economy rate of rise to reduce speed.



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