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Economic Analysis of Industrial Agglomeration

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In recent decades, the rapid economic development of emerging countries like China and India has drawn the attention of many economists. This book by Jian Wang aims to apply new economic geography (NEG) to explore some interesting questions in regional economics. For example, why do coastal regions develop faster than hinterland regions? What are the industrial location patterns when regions are asymmetric in terms of accessibility? Is there a normal pattern of industrial redispersion during economic integration? Do central regions always dominate the whole economic system? All of these are now hot topics regarding the Chinese economy and the answers are important to economists and policy makers, not only in China.

Following Krugman (1980, 1991), NEG has become a powerful tool to disclose the self-reinforcing impact of increasing returns to scale, monopolistic competition, and transport costs—the so-called "second nature" (Cronon, 1991) geography. An intelligent (or "silly-seeming" according to Krugman (2009)) assumption is imposed on models—that regions are completely symmetrical and do not have any geographic advantages. This successfully removes the so-called "first nature" of regions. This is necessary in theoretical research for at least two reasons. First, without such an assumption, we cannot know whether the agglomeration forces come from second or first nature characteristics. Second, this assumption drastically simplifies the model to gain tractability. This is important because it makes general-equilibrium frameworks analytically solvable.

Although the symmetry assumption is important in theoretical NEG research, the real world is more complicated. Industrial agglomeration results from both the first and second natures of regions. Therefore, there is a trade-off between the model tractability and rich applications. This is reflected in the book.

This book can be divided into two parts. Following an introductory chapter, Chapters 2-4 focus on NEG while Chapter 5 turns to new trade theory (NTT). Firstly, Chapter 2 provides a nice review of NEG literature, particularly focusing on studies of multiple regions, which are useful to examine how international trade impacts domestic regional economies. The critical review tells the reader that several more steps are required for the theoretical results to be applicable to the real world.

In Chapter 3, a three-region model is established to describe the spatial economy of two countries. One country consists of two regions which are different in size. Moreover, one is the gate region, which is closer to the foreign country (e.g., a coastal region in China). As full asymmetry in transport access and market size is incorporated, such a model is not analytical solvable. Thus, the author conducted some numerical simulations. The results tell us how coastal and hinterland regions change in different ways due to globalization process.

Chapter 4 explores the redispersion issue, which is important but relatively less exploited in the literature. Another model of two countries and three regions is constructed. This is a nice model because analytical results are obtained. As a new finding, the process of industrial redispersion from the gate region to the hinterland in the home country is observed when this country is open to the world.

Chapter 5 employs anther tool—the home market effect (HME) in NTT to examine the Chinese economy. The literature review includes the most recent theoretical results. For example, some different definitions of the HME are compared here. Empirical studies on the HME in terms of wages and firm location are conducted. This book offers solid evidence to verify the existence of the HME within a country. More importantly, the empirical analysis provides a clear distinction between the primary magnification effect (PME) and the secondary magnification effect (SME). The Chinese data suggest that wages in larger coaster regions are higher than in the interior due to the asymmetric regional population. Further, the nonmonotonic disparity in wages is also supported by using Chinese regional data.

Finally, some interesting directions for future research, both theoretical and empirical, are suggested in Chapter 6. Some of these would be helpful for graduate students.

In summary, this short book tells us how to apply theoretical results to the real world and how to combine them with empirical research. Unlike the symmetry assumption in most theoretical models, it recognizes that there are developed and developing countries in the world. Similarly, for example, it recognizes that there are coastal, hinterland and border regions which are different from other regions. The problem of regional asymmetry is therefore addressed here. Nevertheless, this is a continuing process and such issues are far from being completely solved. For example, resource endowment and human capital are important to economic geography, but they are not considered in this book. As a result, we are encouraged to further refine existing models to better fit the real world.

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