



Spatial proximity and location dynamics of knowledge-intensive business service in the Pearl River Delta, China



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ABSTRACT

Western studies on location dynamics of knowledge-intensive business services (KIBS) suggest that KIBS firms tend to locate proximally to multinational enterprises and already established KIBS firms. This paper examines the location dynamics of KIBS firms in the Pearl River Delta (PRD) of China, one of the manufacturing centers and fastest-growing global mega-city regions in the world. This study reveals that KIBS in the PRD have become more spatially concentrated from 2004 to 2008. Both state-owned enterprises (SOEs) and foreign-owned enterprises (FOEs), two dominant players in the regional economy, play a positive role in attracting KIBS-births. This indicates that the presence of SOEs and FOEs has significantly shaped the location patterns of KIBS firms in the PRD, and the influence of SOEs is even stronger than that of the FOEs. Moreover, the new KIBS firms tend to co-locate with existing KIBS firms, which confirms that the cumulative causation mechanism matters in new KIBS firm formation process in the PRD. Other contextual factors, such as the state-governed developing zones (DZs), also have positive effects on KIBS-births. These findings suggest that more attention should be paid to the role of the state in restructuring the economic landscape of China where a mature market economy system is still lacking, although there are increasing signs of the influence of global firms.

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1. Introduction

In recent years, knowledge-intensive business services (KIBS) is one of the most rapidly growing economic sectors in China, but its location dynamics are relatively less examined. It is generally accepted in literature that, as an “industry” or “sector” that undertake complex operations of intellectual nature in which human capital is the dominant factor, KIBS firms follow a distinct location logic quite different from manufacturing and other service firms. Experiences from Western advanced countries show that, KIBS firms exhibit a tendency to concentrate geographically in globalizing metropolitan areas, a phenomenon explained as co-locating with internationally operating clients (e.g., multinational enterprises or transnational corporations) or with leading firms within the regional economy (Bennett, Graham, & Bratton, 1999; Coffey & Shearmur, 1997; Jacobs, Koster, & van Oort, 2013). Meanwhile, scholars observe that KIBS exhibit a tendency toward

decentralization in suburban business nodes in some advanced economies (Daniels, 1995; Keeble & Nachum, 2002; Shearmur & Alvergne, 2002). In conventional wisdom, the concentration of KIBS firms has been attributed primarily to factors related to agglomeration theories (Keeble & Nachum, 2002; Shearmur & Alvergne, 2002; Shearmur & Doloreux, 2008). The more recent explanations have highlighted the importance of other factors such as spatial division of labor, cumulative causation mechanism, and global production networks (Coe & Townsend, 1998; Jacobs et al., 2013; Koch & Stahlecker, 2006; Tether, Li, & Mina, 2012; Wood, 2002).

However, most of these theoretical insights are mainly drawn from the experiences of Western advanced countries, where mature market mechanisms have been established. As a former socialist economy which is still undergoing market-oriented transition, China is characterized by country-specific features of mixed economy that may influence the location behaviors of KIBS firms. First, different from these Western advanced countries where indigenous multinational enterprises play dominant role, the Chinese economy is simultaneously dominated by both internal and external forces—the state and foreign capitals. On the one hand,

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SOEs, which are seen as a form of government agency or part of the government, are considerably strong internal forces in the Chinese economy, especially in some key industries (Putterman & Dong, 2000). On the other hand, external forces, especially the foreign investment inflow, have emerged as a major driving force of economic development since the early 1980s after economic reform (Sit & Yang, 1997; Yuan, Wei, & Chen, 2014). FOEs possess two crucial factors — capital and external market linkages. The location behaviors of these two types of firms vary, generating different impacts on KIBS firms. Second, firms in China and in Western advanced countries are different in regards to their position within the global value chain or production networks, nature of ownership, strategic priority, and the ways in which they operate. Thus, Chinese firms are believed to have distinctive location behaviors. Third, different from these Western advanced countries which by any measure are dominated by service economies, Chinese economy has not reached the post-industrial stage, but exhibits a parallel growth of the manufacturing and service sectors. Despite the accelerated growth of tertiarization in recent years, manufacturing still remains an important and active sector in the Chinese economy at the current stage, which may be possible to influence spatial behaviors of KIBS firms.

Due to these special characteristics of the Chinese economy, location dynamics of KIBS in China may not completely confirm to the location behaviors of KIBS in Western advanced countries, and thus need further studies. By investigating the case of the Pearl River Delta (PRD) in China, one of the important manufacturing centers and fastest-growing global mega-city regions in the world, we attempt to understand the spatial patterns and underlying determinants of KIBS firms in the Chinese context, in order to shed light on the differences of location dynamics between China and other Western advanced countries. This study involves a dynamic analysis, with a special focus on the new firm formation process. Using micro-level data covering all officially-registered firms within the PRD, we can investigate the general view of KIBS development in a manner of “studying regions by studying firms” (Markusen, 1994). To address these issues, we first examine the evolution of the spatial distribution of the existing and new KIBS firms in the PRD over time, employing the distance-based non-parametric method proposed by Duranton and Overman (2005) (hereafter “DO”). Subsequently, we assess the impacts of different factors on new KIBS firms.¹ In particular, we test the impacts of spatial proximity to four types of firms—SOEs, FOEs, existing KIBS firms, and existing manufacturing firms. The magnitude of such impacts is estimated using the count regression model. The remainder of this paper is organized in five parts. Section 2 provides a literature review on theoretical insights and empirical evidence on the location dynamics of KIBS firms. Section 3 describes the study scope, dataset, and methodological issues concerning this study, and formulates four hypotheses. Section 4 shows the main results and detailed analyses. Section 5 concludes the study and summarizes its major findings and discussions.

2. Understanding the location dynamics of KIBS

KIBS firms are characterized as vectors of information exchange — creators, carriers, and converters of new knowledge — and are therefore of key importance to the improvement of the innovative performance, technological change, and economic competitiveness of a regional economy (Wood, 2002). Mostly, KIBS firms provide

intangible services, such as specialized expert knowledge, R&D competencies, and problem solving to clients that are principally other producers, rarely individuals (Koch & Stahlecker, 2006). Given the nature of their provision, KIBS firms require intensive and in-depth interactions with clients, suppliers, and partners.

Generally, empirical evidence of advanced market economies shows that, KIBS firms have a strong concentration propensity (OhUallachain & Leslie, 2007; Schwartz, 1992; Shearmur & Alvergne, 2002; Shearmur & Doloreux, 2008). At the macro-level, they tend to be located in global mega-city regions or world cities because of their need for accessibility to global networks, clients, and international knowledge (Bennett et al., 1999; O'Farrell, Moffat, & Hitchens, 1993; Sassen, 2001; Shearmur & Doloreux, 2008). At the micro-level, KIBS firms prefer the core areas of cities, the central business districts (CBD) in particular, to benefit from the four competitive advantages argued by Porter (1995) — market access, human resources, strategic location, and possibilities of integration with regional clusters. Meanwhile, an outward movement of KIBS firms has been observed in some advanced market economies (Coffey & Shearmur, 2002; Keeble & Nachum, 2002; Moulaert & Gallouj, 1995; Shearmur & Alvergne, 2002). More and more KIBS firms, especially small and medium-sized firms, appear to be moving from city centers to decentralized locations within the metro-area. New KIBS firms also opt for sub-centers with a certain type of locational advantages because they cannot afford the high rent in the core areas. Thus, new suburban centers have emerged gradually, as a result of the clustering of the sub-sectoral level specialized types of KIBS firms. This decentralized tendency is noted as “concentrated decentralization” instead of generalized dispersion (Daniels, 1995).

Theoretical attempts to investigate into the geographical patterns and concentration/decentralization processes have provided insights into the location dynamics of KIBS. In conventional perspectives, location dynamics of KIBS can be explained by agglomeration theories, which stress the importance of positive externalities including information sharing, knowledge spillovers, common consumers, specialized labor pool, high quality urban amenities, presence of universities, and easily accessible transportation facilities (Jacobs et al., 2013). Co-locating with other KIBS firms generates the localization economies stemming from the geographical concentration and clustering of similar types of industry. The argument is also made to attribute the concentration of KIBS firms in the CBDs of large metropolitan areas to the so-called urbanization externalities, with each firm benefiting from the presence of firms in various sectors (Henderson, Kuncoro, & Turner, 1995; Henderson & Ono, 2008).

Furthermore, location dynamics of KIBS can be explained through alternative perspectives, each one pertaining to its own theoretical insights. First, the spatial restructuring of KIBS is seen as a process of functional specialization between the CBD and suburban centers (Coffey, Drolet, & Polèse, 1996; OhUallachain & Leslie, 2007). KIBS firms choose their locations depending on their operational needs. For instance, the front-office functions are more likely to be located in CBD, whereas the back-office functions tend to choose suburban centers because of cheaper rent. Second, the clustering of KIBS firms in suburban centers results primarily from the cumulative causation mechanism of the new firm formation process (Coe & Townsend, 1998). This mechanism refers to the cumulative impacts exerted by the initial agglomeration of a sector in a given place on this locale as an attractive center for relevant sectors, by increasing the likelihood of new firm birth, spin offs, and relocations. Third, the reason for the co-location of the KIBS firms with internationally operating clients or leading firms in the region is to be embodied in the global production networks (Coe, Hess, Yeung, Dicken, & Henderson, 2004; Keeble & Nachum,

¹ The terms “new KIBS firms” and “KIBS-births” have the same meaning and are used interchangeably in this paper. Similarly, the terms “firms” and “enterprises” are also used interchangeably.

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