What drives spatial clusters of entrepreneurship in China? Evidence from economic census data[☆]

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ABSTRACT

Since Chinese government initiated economic reform in the late 1970s, entrepreneurship and private sectors have emerged gradually and played an increasingly important role in promoting economic growth. However, entrepreneurship is distributed unevenly in China. Using micro data from 2008 economic census and 2005 population census, this paper explains spatial clusters of entrepreneurship for both manufacturing and services. For both sectors, entrepreneurship (measured by new private firms) tends to emerge in places with more relevant upstream and downstream firms. Moreover, Chinitz's (1961) theories are also supported for manufacturing: small upstream and downstream firms seem to be more important for manufacturing entrepreneurship. For both sectors, entrepreneurship is positively related to city size, the share of young adults and the elderly population, and foreign direct investment. More migrants are also found to promote service entrepreneurship. Our paper is the first to consider both manufacturing and service entrepreneurship in China and should be of interest to both local and national policymakers who plan to encourage entrepreneurship.

1. Introduction

Economists have long recognized the crucial role of entrepreneurship in economic growth. Indeed, more than eighty years ago, Schumpeter (1934) points out that entrepreneurship is an indispensable element for economic development by "carrying out new combinations". Recent empirical studies substantiate that entrepreneurship has a significant effect on local employment and economic growth (e.g., Glaeser, Kerr, & Ponzetto, 2010; Li, Yang, Yao, Zhang, & Zhang, 2012; Glaeser, Kerr, & Kerr, 2015). Not surprisingly, however, the nature and effectiveness of entrepreneurial activities will vary significantly. For instance, regional variations in entrepreneurship have been documented in many countries and regions including Britain (Georgellis & Wall, 2000), Europe (Bosma & Schutjens, 2011), Germany (Audretsch & Fritsch, 1994), India (Ghani, Kerr, & O'Connell, 2014) and the United States (Acs & Armington, 2002, 2006; Glaeser & Kerr, 2009). Nonetheless, more studies on the regional impacts of entrepreneurship are needed to direct local policies aimed at promoting more successful business ventures.[1]

This paper examines spatial clusters of entrepreneurship in China by employing a framework that formerly used to analyze analogous spatial clusters in the U.S. (Glaeser & Kerr, 2009) and India (Ghani et al., 2014). To understand important regional differences in entrepreneurship, this investigation relies on a methodological foundation whereby specific metrics can be formulated to exploit the effects of local industrial conditions, such as the agglomeration forces emphasized by Marshall (1890): distance proximity to suppliers and customers, laborers and ideas. These metrics are constructed by combining establishment- or firm-level microdata with information from inter-industry relationships (e.g., an input-output table). This study utilizes economic census data from 2008 and population census data from 2005 to investigate Chinese entrepreneurship, which is defined herein as the creation of new private firms.

Our contributions to the literature are twofold. First, we examine the entry of manufacturing and services as separate entities in China.[2] There are three important rationale for treating manufacturing and services separately. One important rational is that the level of entrepreneurship varies greatly across industries. Consider, for example, that with the industrial shift from manufacturing to services in recent decades, manufacturing entry in the U.S. is considerably less active in comparison to the service side (Acs & Armington, 2002; Glaeser & Kerr, 2009). Another rational is that the entry of different sectors in a region may differ in their sensitivity to the local socioeconomic environments. For example, many services (including entertainment and education) are likely to be more dependent on the skills and contributions of local workers, which can augment knowledge spillover. Moreover, Acs and Armington (2004) report that the local human capital is conducive to the entry of particular services. In contrast, Glaeser and Kerr (2009) argue that manufacturing firm entry is only weakly related to local human capital. Besides, researchers indicate that the regional unemployment rate may have a stronger impact on service start-ups in comparison to manufacturing start-ups (e.g., Acs & Armington, 2002). The reason for this connection is that higher unemployment levels tend to provide cheaper workers for start-ups as well as encourages unemployed workers to start their own businesses which may benefit more labor-intensive sectors that require less capital. The third rationale for distinguishing manufacturing firm entry from services firm entry is that these two sectors may differ in their impacts on urban growth. For instance, over the past decades U.S. cities with higher shares of employment in manufacturing have tended to underperform economically.

Our second contribution to the literature is to utilize comprehensive micro data from the 2008 economic census, which covers all Chinese firms at this point in time.[3] Guo, He, and Li (2016) examine clusters of manufacturing entrepreneurship from 2001 to 2007 in Chinese cities, but they rely on data from the Annual Survey of Industrial Firms (ASIF), which only includes manufacturing firms with sales revenues greater than five million yuan. The main advantages of utilizing the economic census data are threefold: first, it allows us to measure local industrial environments constructed by all industries; second, it enables us to investigate the Chinitz effect more accurately since the data includes both large and small firms; and third, it permits a more thorough examination of the entry of small firms which may create more jobs as compared to large firms. Indeed, based on our calculations from the 2008 economic census, 45% of new start-ups created in 2008 employ 40 employees or less, of which 18% employ 10 employees or fewer.

Our main empirical results are summarized as follows: to promote entrepreneurship in an industry, it is important that there are substantial number of existing firms in that industry. In contrast, the presence of more state-owned enterprises (SOEs) in the same industry appears to hinder the entry of new private service firms. Three Marshallian metrics are constructed to measure distance proximity to input suppliers, output customers, and firms that employ similar workers. Two Chinitz metrics are constructed to measure the average size of both suppliers and customers. Overall, our findings support the existence of the Marshallian effects for both sectors and the Chinitz effects for manufacturing. In short, new private firms tend to emerge in the locations where more relevant upstream and downstream firms are concentrated, and where there are many small firms that provide inputs and purchase outputs. Findings also indicate that agglomeration externalities matter more for small private start-ups.

Among the general city traits that influence the entrance of private start-ups, it is found that for both manufacturing and services, burgeoning entrepreneurship tends to be higher in larger cities with more young adults and elderly people and with more foreign direct investment. We also confirm the influence of certain distinct entry patterns for these two sectors: high-density cities tend to encourage private manufacturing start-ups, but discourage private customers start-ups. In addition, the presence of migrants appears to be a more significant factor for private service start-ups in comparison to manufacturing start-ups. However, the quality of infrastructure appears to have a mixed impact for entrepreneurship.

The remainder of this paper is structured as follows: Section 2 provides a brief background on the Chinese economy. Section 3 describes our data and the measure of entrepreneurship, Section 4 discusses the determinants of entrepreneurship, while Sections 5 and 6 present the econometric models and report the empirical results. Section 7 summarizes this paper.

2. Background

It is worth noting the two key features of the Chinese economy related to this paper. The first is the evolution of private sector, and the second is the shift in the manufacturing and service sectors in China in terms of their relative importance since 1949. The first factor represents the development and re-emergence of entrepreneurship in China, and the second one highlights that the importance

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[2] A number of prior studies have distinguished among different types of industries to study the new firm formation in other countries (Audretsch & Fritsch, 1999; Acs & Armington, 2002; Acs & Armington, 2004; Nystrom, 2007; Otsuka, 2008; Glaeser & Kerr, 2009; Jofre-Monseny, Marin-Lopez, & Viladecans-Marsal, 2011; Ghani et al., 2014; Binet & Facchini, 2015). However, few scholars consider the entry of services in China.

[3] The National Bureau of Statistics has compiled three national economic census data: 2004, 2008, and 2013. We are fortunate to be able to access to both the 2004 and 2008 economic census data. To the best of our knowledge, the 2013 economic census micro data is not yet available to any scholars. Similarly, the ASIF micro data for 2009 is the newest accessible data for most scholars.